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SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-2AC-130W,
VOLUME 2**



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Flying Operations

**AC-130W AIRCREW EVALUATION
CRITERIA**

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This instruction implements Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization /Evaluation, and General Operations Structure*. It establishes evaluation criteria for initial (INIT) and periodic aircrew qualification for all units operating AC-130W Gunships. It is used in conjunction with Air Force Instruction 11-202, Vol 2, *Aircrew Standardization/Evaluation Program*, and Major Command (MAJCOM) supplements thereto. This publication does not apply to the Air National Guard (ANG). This publication does not apply to Air Force Reserve Command (AFRC) units. The Privacy Act of 1974 applies to certain information gathered pursuant to this instruction. The Privacy Act System Number F011 AF XO A, Aviation Resource Management Systems (ARMS) covers required information. The authority for maintenance of ARMS is 37 U.S.C. 301a (Incentive Pay), Public Law 92-204, Section 715 (Appropriations Act for 1973), Public Laws 93-570 (Appropriations Act for 1974) and 93-294 (Aviation Career Incentive Act of 1974), DoDD 7730.57 (Aviation Career Incentive Act of 1974 and Required Annual Report, February 5, 1976, with Changes 1 and 2), and Executive Order 9397 as amended by Executive Order 13478, Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers, November 18, 2008. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through MAJCOM publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

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Chapter 1

GENERAL INFORMATION

1.1. Objectives. The Aircrew Standardization and Evaluation Program is the commander's tool to validate mission readiness and the effectiveness of unit flying, to include documentation of individual aircrew member qualifications and capabilities.

1.2. General. This instruction establishes requirements and grading criteria for ground and flight phases of initial and periodic flight evaluations. All AC-130W [flown by Special Operations Forces (SOF) aircrew] evaluations will be conducted IAW this instruction guidance and AFI 11-202, Vol 2, as supplemented. Specific areas for evaluation are prescribed to ensure an accurate assessment of the proficiency and capabilities of aircrews. Flight examiners use this AFI when conducting aircrew evaluations. Instructors use this AFI when preparing aircrews for qualification. (T-2)

1.3. Applicability. This instruction applies to all individuals performing crew duties on AC130W aircraft or Weapon System Trainers (WST).

1.4. Key words and definitions.

1.4.1. "Will" and "Shall" indicate a mandatory requirement.

1.4.2. "Should" is used to indicate a preferred, but not mandatory, method of accomplishment.

1.4.3. "May" indicates an acceptable or suggested means of accomplishment.

1.4.4. "Note" indicates operations procedures, techniques, etc., considered essential to emphasize.

1.4.5. See **Attachment 1**, Glossary of References and Supporting Information for additional terms, definitions, and references.

1.5. Waivers. Waiver authority for the contents of this document is AF/A3O. IAWAFI 11202, Vol 2 the MAJCOM/A3 is the waiver authority for individual aircrew requirements on a case-by-case basis, but the MAJCOM/A3 may not approve blanket or group (two or more aircrew) waivers. Waiver requests should be submitted through MAJCOM Standardization and Evaluation channels to the MAJCOM/A3. As applicable, MAJCOM/A3 will forward requests to AF/A3O, with an info copy to AF/A3OI. (T-1) Post all waivers to this instruction in the individual's flight evaluation folder behind Tab 2. See AFI 11-202, Vol 2, AFSOC Sup 1, for waiver documentation.

1.5.1. Tier requirements refer to waiver authority based on level of risk IAW AFI 33-360:

1.5.1.1. "Tier 0" (T-0) Requirement is external to the Air Force and consequence of non-compliance is determined by respective non-AF authority. Requests for waivers must be processed through command channels to publication OPR for consideration.

1.5.1.2. "Tier 1" (T-1) Non-compliance puts Airmen, commanders, or the USAF strongly at risk of mission or program failure, death, injury, legal jeopardy or unacceptable, fraud, waste or abuse. Waiver authority is the MAJCOM/CC (Delegable

no lower than the MAJCOM Director) with concurrence of the publication's Approving Official.

1.5.1.3. "Tier 2" (T-2) Non-compliance may degrade mission or program effectiveness or efficiency and has potential to create moderate risk of mission or program failure, death, injury, legal jeopardy or unacceptable, fraud, waste or abuse. Waiver authority is the MAJCOM/CC (Delegable no lower than the MAJCOM Director).

1.5.1.4. "Tier 3" (T-3) Non-compliance may limit mission or program effectiveness or efficiency and has a relatively remote potential to create risk of mission or program failure, death, injury, legal jeopardy or unacceptable, fraud, waste or abuse. Waiver authority is the Wing/CC (Delegable no lower than Group/CC or equivalent).

1.6. Supplements. Units are encouraged to supplement this instruction with standard evaluation profiles that best fit the unit's mission, equipment, and location. MAJCOMs will forward a copy of MAJCOM supplements to HQ USAF/A3OI, through HQ AFSOC/A3V, for approval. Units below MAJCOM level will forward one copy of each supplement to their MAJCOM OPR for prepublication review. (T-1)

1.7. Evaluation Procedures. Before the crew briefing, the evaluator will inform the aircraft commander of any special requirements. Flight examiners will brief the examinee on the conduct, purpose, and requirements of the evaluation, as well as all applicable evaluation criteria, prior to flight. The examinee will accomplish all required mission planning. If an Operations Planning Team or Deployment Planning Team accomplishes mission planning, the examinee is ultimately responsible for the accuracy and completeness of all mission-planning paperwork. Flight examiners will be furnished a copy of necessary charts, flight logs, mission folders, and any additional items they deem necessary. The flight examiner should not occupy a primary crew position during evaluations to ensure the most comprehensive evaluation. If conditions warrant; however, the flight examiner may occupy a primary crew position during an evaluation. (T-2)

1.7.1. Flight examiners will ensure all required training and documentation is complete prior to initial/requalification (RQ) evaluations. (T-2)

1.7.2. Unless requested by examinee and approved by squadron supervision, the examinee will be current for all events evaluated during a periodic evaluation. (T-2)

1.7.3. Flight examiners will not intentionally fail any equipment during flight evaluations, but may deny the use of systems not affecting safety of flight. (T-2)

1.7.4. Flight examiners will thoroughly debrief/critique all aspects of the flight. During the critique, the flight examiner will review the examinee's overall rating, specific deviations, area/subarea grades assigned, and any additional training required. (T-2)

1.8. Grading Instructions. All evaluations will follow the guidelines in AFI 11-202, Vol 2, as supplemented, and this volume. Examiners will use the criteria contained in this volume to accomplish all flight, simulator, and emergency procedures evaluations. To ensure standard and objective evaluations, flight examiners will be thoroughly familiar with the prescribed evaluation criteria. (T-2)

1.8.1. Area/Subarea Grades. Areas/subareas will have a two-level (Q/U) or three-level (Q/Q-/U) grading system. Discrepancies will be documented against the listed subareas. (T-2)

1.8.1.1. Q. Q indicates the examinee demonstrated both a satisfactory knowledge of all required information and performed aircrew duties within the prescribed tolerances. (T-2)

1.8.1.2. Q-. Q- indicates the examinee is qualified to perform the assigned area/subarea tasks, but requires debriefing or additional training as determined by the flight examiner. Deviations must not exceed the prescribed Q- tolerances, jeopardize flight safety, or be a breach of flight discipline. (T-2)

1.8.1.3. U. U indicates that performance was outside allowable parameters thereby compromising flight safety, that deviations from prescribed procedures/tolerances adversely affected mission accomplishment, and/or evaluated performance constituted a breach of flight discipline. An examinee receiving an area/subarea grade of U requires debriefing and/or additional training, as determined by the flight examiner. (T-2)

1.8.2. Critical Areas. Critical areas require adequate accomplishment by the aircrew member in order to successfully achieve the mission objectives. If an aircrew member receives an unqualified grade in any critical area, the overall grade for the evaluation will also be unqualified. Critical areas are identified by “Critical” in the area title. (T-2)

1.9. Evaluation Requirements. Evaluation profiles will reflect a sampling of the unit’s missions. Evaluation tables are provided to summarize evaluation areas. Areas common to all crew members are contained in **Table 2.1**. Instructor evaluation areas are in **Table 3.1**. Evaluation areas unique to each crew position are located in their respective chapter. Each crew specific chapter defines required events. Events required in-flight only, and/or in simulators (see [Paragraph 1.9.1](#) below), and/or alternate methods (see [Paragraph 1.9.2](#) below) will be identified in the crew specific tables. For any areas without a note, flight examiners may evaluate at their discretion if observed. If required events are not observed, then the evaluation is incomplete and will be accomplished on another flight. If a required event cannot be accomplished, the evaluator will place a restriction on the AF Form 8, *Certificate of Aircrew Qualification*, or AF Form 8A, *Certificate of Aircrew Qualification (Multiple Aircraft)*, as applicable. (T-2)

1.9.1. Simulator. WSTs with a C or greater certification (or Training Value Code (TVC) of 3 or greater for all areas evaluated as determined by simulator certification (SIMCERT)) may be used to accomplish evaluations. Simulator certifications will be located at the AFSOC/A3T website. (T-2)

1.9.1.1. If an area/subarea could not be evaluated in-flight, and the event is certified for evaluation purposes in the simulator, it can be evaluated in the simulator to complete the evaluation. Document in the comments section of AF Form 8/8A which portion(s) of evaluation were conducted in the simulator. (T-2)

1.9.2. Alternate Method. When it is impossible to evaluate an area in-flight due to equipment malfunctions, operational requirements, scheduling restrictions, or weather, the area may be evaluated by an alternate method (procedural trainer, or verbal examination) unless noted in the crew specific chapter. If, in the flight examiner’s judgment, an item

cannot be adequately evaluated by an alternate method, complete the evaluation on an additional flight. Document in the comments section of AF Form 8/8A which portions of the evaluation were conducted via alternate method. (T-2)

1.9.3. Grading Criteria. To the maximum extent possible, flight examiners will use the grading criteria in this volume to determine individual area grades. Exercise judgment when the wording of areas is subjective and when specific areas are not covered. Flight examiner judgment will be the determining factor in arriving at the overall grade. Consider cumulative deviations when determining the overall grade. (T-2)

1.9.3.1. Base tolerances for in-flight parameters on conditions of smooth air and a stable aircraft. In some cases, momentary deviations are allowable provided the examinee applies prompt corrective action and such deviations do not jeopardize flying safety. (T-2)

1.10. Unsatisfactory Performance. If the flight examiner observes an aircrew counterpart jeopardizing safe flight, the examiner will assume the duties of that aircrew member (provided the examiner's flight duty period does not exceed AFI 11-202, Vol 3, *General Flight Rules*, maximum flight duty period for an unaugmented crew). This does not mean the examiner must assume the examinee's position any time unsatisfactory performance is observed. If the examiner feels the examinee can continue safely with supervision, the examiner is not required to assume the examinee's duties. However, if the flight examiner assumes the examinee's duties, a Qualification Level 3 (Q-3) will be assigned as the overall grade. (T-2)

1.10.1. Evaluators must report deviations/discrepancies from established procedures/directives in any area, regardless of the individual's crew specialty, to squadron/group commander for evaluation and necessary action in accordance with AFI 11-202, Vol 2, as supplemented. (T-2)

1.11. Additional Training. Flight examiners are responsible for assigning additional training, at their discretion. Document additional training and completion IAW AFI 11-202, Vol 2, as supplemented. Any approved training device or medium may be used for additional training. (T-2)

1.11.1. Additional training may be accomplished on the same flight as the evaluation, when unique situations present valuable training opportunities (i.e., crosswind landings), and the discrepancy requiring the additional training will not result in overall Q-3 evaluation. However, this option requires flight examiner discretion and judicious application. The examinee must be informed when the additional training begins and ends. (T-2)

1.12. Rechecks. Rechecks should normally be administered by a flight examiner other than the one who administered the original evaluation.

1.13. Special Qualifications. Special qualification evaluations are administered for events that are not universal to all members in that crew position. Special qualification evaluations may be conducted separately or in conjunction with qualification/mission (QUAL/MSN) evaluations. There are no requisites for special qualification evaluations unless specified. Refer to the appropriate crew position for any special qualification evaluation requirements.

1.13.1. Special qualifications result in an AF Form 8/8A. Special qualification evaluations are SPOT evaluations IAW AFI 11-202, Vol 2, as supplemented. Further description of the

specific event evaluated will be included in the mission description section of the comments block of the AF Form 8/8A. Although a unit may maintain 100 percent of its crew members qualified, this documentation is still required due to interfly and permanent change of station issues. (T-2)

1.14. Multiple Qualifications. Crew positions, evaluation requirements, and approval authority are IAW AFI 11-202, Vol 2, as supplemented.

Chapter 2

EVALUATION REQUIREMENTS

2.1. General. The general criteria contained in this chapter apply to all crew positions and all evaluations. Use criteria and table in the appropriate crew position chapters for evaluations. (T2)

2.1.1. All evaluations will follow guidelines in AFI 11-202, Vol 2, as supplemented, and **Table 2.1** in this volume. This table depicts specific grading areas that apply to all crew position evaluations; **Table 3.1** applies to all instructor evaluations. (T-2)

2.1.2. Administer aircrew evaluations on any flight that as scheduled will accomplish all required items for that evaluation. Mission evaluations should be as realistic as possible with minimum of simulated events. Do not deviate from peacetime restrictions. (T-2)

2.2. Requirements.

2.2.1. Evaluate all crew members with guidance in the following subparagraphs, **Table 2.1**, and crew-specific chapters and tables. For instructor evaluations, also see **Table 3.1**. (T-2)

2.2.2. Examinations. All crew members will complete open and closed book examinations as a requisite to periodic evaluations. Pilots must complete separate open and closed book examinations as requisites to periodic QUAL and MSN evaluations. All other crew members will complete combined periodic QUAL/MSN examinations. Conduct requisite examinations IAW AFI 11-202, Vol 2, as supplemented. (T-2)

2.2.3. Emergency Procedures Evaluation (EPE). An EPE is a requisite for all flight evaluations. EPEs may be conducted verbally, in-flight, in a simulator, or by another method determined by the examiner or unit Stan/Eval. Operations Group Standardization/Evaluations (OGVs) may develop EPE guides for each crew position flight examiner use. EPEs should be scenario driven, and tailored to the specific crew position. The EPE will include areas commensurate with the examinee's qualification and experience level. Emphasize emergency procedures and systems knowledge. Examiners should include other general knowledge areas as well. For mission evaluations, evaluate mission-specific equipment and situations. EPEs will include sufficient inflight and ground emergencies to evaluate the examinee's knowledge of systems and procedures to the flight examiner's satisfaction. (T-2)

2.2.3.1. Examinees may use publications that are normally available in-flight. The examinee must recite all Boldface items from memory and should provide the initial steps of emergency procedures that, in the opinion of the examiner, would not allow time for reference. (T-2)

2.2.3.2. The following grading criteria will be used to grade individual items on EPEs for all crew positions. The flight examiner will assign an overall EPE grade (#1, #2, or #3) in the Qualification Ground Phase block of the AF Form 8/8A, regardless whether all or a portion of the EPE was performed in-flight. (Exception--for Boldface, use grading criteria in Area 4). (T-2)

2.3. Cockpit/Crew Resource Management (CRM). In accordance with AFI 11-290, *Cockpit/Crew Resource Management Training Program*, CRM skills will be evaluated during initial and periodic evaluations. CRM skills are integral to all phases of flight; therefore no specific area titled CRM exists. CRM skills are imbedded within specific grading criteria (mission planning, airmanship/situational awareness, crew coordination, communication, risk management/decision making, task management, and briefing/debriefing) and include all of the skills listed on the AF Information Management Tool (IMT) Form 4031, *CRM Skills Criteria Training/Evaluation Form*. Therefore, use of the AF IMT Form 4031 is unnecessary for evaluations.

2.4. Formal Course Evaluations. Fly syllabus evaluations IAW syllabus mission profile guidelines if stated, or on a mission profile developed from syllabus training objectives. All required areas must be evaluated for the type of evaluation being flown, IAW guidance in this volume. Grade training objectives and related areas using the performance criteria in this volume. Formal course guidelines may be modified, based on local operating considerations or examiner judgment, to complete the evaluation. (T-2)

2.5. 14th Weapons Squadron. Evaluations of 14th Weapons Squadron personnel will conform to guidance in AFI 11-202, Vol 2, as supplemented. (T-2)

2.6. General Grading Criteria.

2.6.1. Areas 1 through 19: The following subparagraphs contain grading criteria for the areas listed in **Table 2.1**.

2.6.1.1. Area 1. Safety - CRITICAL.

2.6.1.1.1. Q. Was aware of and complied with all safety factors required for safe aircraft/ equipment operation and mission accomplishment. Identified and assessed risk appropriately. Properly considered consequences of decisions.

2.6.1.1.2. U. Not aware of, and/or did not comply with all safety factors required for safe aircraft/equipment operation or mission accomplishment. Failed to properly identify and assess risk. Failed to consider consequences of decisions. Operated the aircraft/equipment in a dangerous manner.

2.6.1.2. Area 2. Aircrew Discipline - CRITICAL.

2.6.1.2.1. Q. Demonstrated strict professional flight and crew discipline throughout all phases of the mission.

2.6.1.2.2. U. Failed to exhibit strict flight and crew discipline. Violated or ignored rules or instructions.

Table 2.1. General Grading Areas (All Crew Positions and All Evaluations).

Area	Notes	Area Name
1	1	Safety - CRITICAL
2	1	Aircrew Discipline - CRITICAL
3	1	Airmanship/Situational Awareness - CRITICAL

Area	Notes	Area Name
4	2, 3	Boldface - CRITICAL
5	3	Emergency Procedures Evaluation (EPE)
6	1	Crew Coordination
7	2	Mission Planning
8	2	Knowledge of Directives
9	1	Preflight
10	1	Use of Checklist
11	2	Forms/Reports/Logs
12	2	Personal/Professional Equipment/Flight Publications
13	2, A	Emergency and Aircrew Flight Equipment (AFE)/Procedures
14	2, B	Briefings/Debriefings
15	2, C	Classified Material/Operations Security (OPSEC)
16	2	Anti-hijacking/Aircraft Security
17	1	Communication
18	2	Risk Management/Decision Making
19	1	Task Management
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method. 3. Only required for QUAL evaluation. A. Grade if observed. Not required if evaluated as part of the EPE. B. Required for all crew positions responsible for presenting briefings/debriefings. C. Required for mission evaluations only.		

2.6.1.3. Area 3. Airmanship/Situational Awareness - CRITICAL.

2.6.1.3.1. Q. Executed the assigned mission in a timely, efficient manner. Anticipated situations that would have adversely affected the mission, and corrected them. Made appropriate decisions based on available information. Recognized a loss in situational awareness in self or others, and took appropriate action to regain. Demonstrated situational awareness throughout the mission and conducted the flight with a sense of understanding and comprehension.

2.6.1.3.2. U. Decisions or lack thereof resulted in failure to accomplish the assigned mission. Demonstrated poor judgment to the extent that the mission or safety was compromised. Failed to recognize a loss of situational awareness in self or others.

2.6.1.4. Area 4. Boldface - CRITICAL.

2.6.1.4.1. Q. Able to recite/write emergency boldface actions in the correct sequence with no discrepancies.

2.6.1.4.2. U. Failed to recite/write emergency boldface items in the correct sequence. Discrepancies in the procedure.

2.6.1.5. Area 5. Emergency Procedures Evaluation (EPE).

2.6.1.5.1. Qualification Level-1. Satisfactory systems/procedural knowledge. Operated within prescribed limits and correctly diagnosed problems. Performed and/or explained proper corrective action, in the proper sequence, for each type of malfunction. Accomplished all required checklists and/or effectively used available aids. Thoroughly described the location, use, and limitations of emergency equipment.

2.6.1.5.2. Qualification Level-2. Marginal systems/procedural knowledge. Slow to analyze problems or apply proper corrective actions. Did not effectively use checklist and/or available aids. Minor omissions or deviations in describing the location, use, and limitations of emergency equipment.

2.6.1.5.3. Qualification Level-3. Unsatisfactory systems/procedural knowledge. Failed to analyze problem or take corrective actions. Failed to accomplish required checklists and/or unable to locate information in available aids. Major omissions or deviations in describing the location, use, and limitations of emergency equipment.

2.6.1.6. Area 6. Crew Coordination.

2.6.1.6.1. Q. Effectively coordinated with other crew members during all phases of the mission. Provided direction/information when needed.

2.6.1.6.2. Q-. Crew coordination was limited though adequate to accomplish the mission. Slow to provide direction/information when needed. Coordination was lacking with other crew members to the extent minor deviations or omissions caused delays, confusion, and/or negatively impacted crew situational awareness.

2.6.1.6.3. U. Poor crew coordination that negatively affected mission accomplishment or safety of flight. Failed to provide direction/information when needed. Significant breakdown in coordination with other crew members. Crew coordination was lacking to the extent the mission accomplishment was significantly degraded.

2.6.1.7. Area 7. Mission Planning.

2.6.1.7.1. Q. Checked all factors applicable to flight such as Flight Information Publications (FLIP), weather, Notice to Airman System (NOTAMS), alternate airfields, flight logs, performance data, fuel requirements, and charts. When required, extracted necessary information from Air Tasking Order (ATO)/frag. Aware of the

available alternatives if unable to complete the mission as planned. Read/initialed all items in Flight Crew Information File (FCIF)/Read Files. Prepared at briefing time.

2.6.1.7.2. Q-. Minor errors or omissions detracted from mission effectiveness, but did not affect mission accomplishment. Limited knowledge of performance capabilities or approved operating procedures/rules.

2.6.1.7.3. U. Major errors or omissions would have prevented a safe or effective mission. Unsatisfactory knowledge of operating data or procedures. Did not review or initial Go/No-Go items. Not prepared at briefing time.

2.6.1.8. Area 8. Knowledge of Directives.

2.6.1.8.1. Q. Prepared and completed mission in compliance with existing instructions and directives. Demonstrated knowledge of operating procedures and restrictions and where to find them in the correct publications.

2.6.1.8.2. Q-. Minor deviations to established procedures. Unsure of some directives and/or had difficulty locating some information in appropriate publications. Any instances of non-compliance did not jeopardize safety.

2.6.1.8.3. U. Unaware of established procedures and/or could not locate them in the appropriate publication in a timely manner. Failed to comply with a procedure could have jeopardized safety or mission success.

2.6.1.9. Area 9. Preflight.

2.6.1.9.1. Q. Completed systems preflight/inspections IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

2.6.1.9.2. Q-. Minor deviations from established systems preflight/inspection. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

2.6.1.9.3. U. Failed to preflight critical component or could not conduct a satisfactory preflight/inspection. Individual techniques unsafe and/or in violation of established procedures.

2.6.1.10. Area 10. Use of Checklist.

2.6.1.10.1. Q. Consistently used the correct checklist and gave the correct response at the appropriate time throughout the mission.

2.6.1.10.2. Q-. Checklist responses were untimely and/or crew member required continual prompting for correct responses.

2.6.1.10.3. U. Used incorrect checklist or consistently omitted checklist items. Was unable to identify the correct checklist to use for a given situation. Omitted or did not complete checklist(s) at the appropriate time.

2.6.1.11. Area 11. Forms/Reports/Logs.

2.6.1.11.1. Q. All required forms and/or flight plans were complete, accurate, readable, accomplished on time and IAW applicable directives. Related an accurate

debrief of significant events to applicable agencies (Intel, Weather, Maintenance, etc.).

2.6.1.11.2. Q-. Minor errors on forms and/or flight plans did not affect conduct of the mission. Inaccurately reported some information due to minor errors, omissions, and/or deviations.

2.6.1.11.3. U. Did not accomplish required forms and/or flight plans. Omitted or incorrectly reported significant information due to major errors, omissions, and/or deviations.

2.6.1.12. Area 12. Personal/Professional Equipment/Flight Publications.

2.6.1.12.1. Q. Had all required personal and professional equipment. Displayed satisfactory knowledge of the care and use of such equipment and the contents of required publications. Required equipment inspections were current. Publications were current, contained all supplements/changes and were properly posted.

2.6.1.12.2. Q-. Did not have all required personal/professional equipment or had limited knowledge of the use or the content of required publications. Publications contained deficiencies that would not impact flight safety or mission accomplishment.

2.6.1.12.3. U. Did not have required personal/professional equipment essential for the mission. Unsatisfactory knowledge of the care/use of equipment or the content of required publications. Required equipment inspections were overdue or equipment was unserviceable. Publications were outdated and/or contained deficiencies impacting flight safety or mission accomplishment.

2.6.1.13. Area 13. Emergency and Aircrew Flight Equipment (AFE)/Procedures.

2.6.1.13.1. Q. Satisfactory systems/procedural knowledge. Displayed satisfactory knowledge of location and use of emergency and AFE. Operated within prescribed limits and correctly diagnosed problems. Performed/explained proper wear, use, and corrective action for each type of equipment/malfunction. Effectively used available aids.

2.6.1.13.2. Q-. Marginal systems/procedural knowledge. Limited knowledge of location and use of emergency and AFE. Operated within prescribed limits but was slow to analyze problems or apply proper corrective actions. Did not effectively use, omitted, or deviated in use of checklist and/or available aids.

2.6.1.13.3. U. Unsatisfactory systems/procedural knowledge. Displayed unsatisfactory knowledge of emergency and AFE. Exceeded Technical Order (TO) limitations. Unable or failed to analyze problem or take proper corrective action. Did not use checklist and/or available aids.

2.6.1.14. Area 14. Briefings/Debriefings.

2.6.1.14.1. Q. Contributed to the briefing content to ensure it included all applicable information. Briefings effectively organized and professionally presented in a logical sequence. Covered all pertinent items. Established objectives for the mission. Presented all training events and special interest items. Effectively used available

briefing aids. Concluded briefing to allow crew transport on time. Debriefed mission with appropriate feedback.

2.6.1.14.2. Q-. Allowed omission of items pertinent but not critical to the mission. Events out of sequence, hard to follow, some unnecessary repetition. Some difficulty communicating clearly. Did not make effective use of available briefing aids. Limited discussion of training events or special interest items. Dwelled on non-essential items. Not fully prepared for briefing. Debrief covered key points, but lacked detail, constructive feedback, and/or corrective actions.

2.6.1.14.3. U. Failed to conduct/attend required briefings. Failed to use briefing aids. Omitted essential items or did not correct erroneous information that could affect mission success. Demonstrated lack of knowledge of subject. Briefing poorly organized and not presented in a logical sequence. Presented erroneous information that would affect safe/effective mission accomplishment. Presentation created doubts or confusion. Failed to discuss training events or special interest items. Late crew transport due to excessively long briefing. Debrief was ineffective. Placed blame and/or provided inappropriate corrective actions.

2.6.1.15. Area 15. Classified Material/Operations Security (OPSEC).

2.6.1.15.1. Q. Demonstrated thorough knowledge of Communication Security (COMSEC)/OPSEC procedures and courier procedures (if applicable). Had positive control of classified documents and information used throughout the mission. Properly stored, handled, and/or destroyed all classified/COMSEC material or information generated during the mission. Practiced sound COMSEC/OPSEC during all phases of the mission. Identified, requested and obtained all cryptological material required for the mission.

2.6.1.15.2. Q-. Limited knowledge of COMSEC/OPSEC procedures and/or courier procedures (if applicable). Limited knowledge of proper storage, handling, and destruction procedures would not have resulted in compromise of classified material/COMSEC, and did not impact mission accomplishment. Identified cryptological material required for mission, but was slow in requesting/obtaining material or did so only after being prompted.

2.6.1.15.3. U. Unsatisfactory knowledge of COMSEC/OPSEC. Classified documents, COMSEC or information would have been compromised as a result of improper control by examinee. Unfamiliarity with OPSEC procedures had or could have had a negative impact on mission accomplishment. Failed to identify, request or obtain all cryptological materials required for the mission.

2.6.1.16. Area 16. Anti-hijacking/Aircraft Security.

2.6.1.16.1. Q. Explained proper anti-hijacking/aircraft security procedures.

2.6.1.16.2. Q-. Difficulty explaining proper anti-hijacking/aircraft security procedures.

2.6.1.16.3. U. Could not explain proper anti-hijacking/aircraft security procedures.

2.6.1.17. Area 17. Communication.

- 2.6.1.17.1. Q. Communicated in a clear and effective manner. Asked for or gave constructive feedback as necessary. Actively sought other crew member opinions and ideas. Used precise, standard terminology.
- 2.6.1.17.2. Q-. Unclear communication led to repetition or misunderstanding. Slow to ask for or give constructive feedback. Inconsistent use of precise, standard terminology.
- 2.6.1.17.3. U. Failed to communicate effectively. Continuously interrupted others, mumbled, and/or conduct/attitude was detrimental to communication among crew members. Withheld information and failed to ask for/respond to constructive criticism. Failed to use precise, standard terminology.
- 2.6.1.18. Area 18. Risk Management/Decision Making.
- 2.6.1.18.1. Q. Crew member appropriately assessed and mitigated risk in the decision making process. Crew member identified, planned, briefed, and executed alternative mission activity in response to in-flight contingencies in a timely manner after appropriately weighing the risk versus the mission priority.
- 2.6.1.18.2. Q-. Crew member was slow to or made minor errors in assessing and mitigating risk in the decision making process. Crew member was slow to identify, plan, brief, or execute alternative mission activities in response to contingencies.
- 2.6.1.18.3. U. Crew member failed to assess and mitigate risk in the decision making process. Failed to make or participate in crew decisions or withheld information that would have corrected an unsafe situation.
- 2.6.1.19. Area 19. Task Management.
- 2.6.1.19.1. Q. Recognized and requested assistance when task-saturated. Properly prioritized multiple tasks and effectively used available resources, ensuring smooth mission execution.
- 2.6.1.19.2. Q-. Poor task prioritization and inefficient use of available resources resulted in less than optimum mission execution. Slow to recognize and request assistance when task-saturated.
- 2.6.1.19.3. U. Failed to prioritize multiple tasks and did not use available resources.

Chapter 3

INSTRUCTOR EVALUATIONS

3.1. General. The instructor grading criteria apply to initial, requalification, and all recurring instructor evaluations. The examinee must demonstrate the ability to instruct in a safe and effective manner. (T-2)

3.2. Requirements. Evaluate instructors on areas listed in **Table 3.1**. Instructor candidates must be qualified in all areas they will instruct. Initial instructor evaluations may be stand-alone evaluations or accomplished in conjunction with recurring evaluations. If able, evaluate instructor candidates instructing actual students. A requalification instructor evaluation is required anytime an instructor is unqualified for any reason to include commander-directed downgrades. (T-2)

3.3. Instrument (INSTM).

3.3.1. Initial/Requalification. Evaluate instructor candidates on instructor performance during a representative sample of unit's basic maneuvers. (T-2)

3.3.1.1. Evaluate instructor pilot candidate's instructional ability during a representative sample of emergency and instrument procedures. (T-2)

3.3.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. (T-2)

3.4. Qualification (QUAL).

3.4.1. Initial/Requalification. Evaluate instructor candidates on instructor performance during a representative sample of unit's basic maneuvers. (T-2)

3.4.1.1. Evaluate instructor pilot candidates' instructional ability during a representative sample of emergency and qualification procedures. Also, instructor pilot candidates must demonstrate each type of landing applicable to the aircraft from the instructor position. (T-2)

3.4.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. (T-2)

3.5. Mission (MSN). Mission evaluations of instructors will be accomplished in the crew member's primary aircraft. Evaluate instructional ability during a representative sample of unit's mission events. (T-2)

3.5.1. Initial/Requalification. Accomplish the initial instructor evaluation on a mission that permits accomplishment of all required instructor areas. (T-2)

3.5.2. Recurring. Qualified instructors will be evaluated to instructor standards during all recurring evaluations. See **Table 3.1**, Note 3 for recurring MSN evaluations of Basic Aircraft Qualified (BAQ)-only instructors. (T-2)

Table 3.1. Instructor Grading Areas (All Crew Positions).

Area	Notes	Area Name
20	2	Mission Preparation
21	2	Instructional Ability
22	2	Instructor Knowledge
23	2	Briefings/Debriefings/Critique
24	1, 3	Demonstration of Maneuvers/Procedures
25-29		Reserved for future use
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method. 3. Not required on MSN evaluations of Instructors certified as “BAQ only.”		

3.6. Instructor Grading Criteria.

3.6.1. Areas 20 through 29: The following sub-paragraphs contain grading criteria for the areas listed in **Table 3.1**.

3.6.1.1. Area 20. Mission Preparation.

3.6.1.1.1. Q. Thoroughly reviewed student's training folder. Ascertained student's present level of training. Assisted student in pre-mission planning and allowed student time for questions. Correctly prioritized training events. Gave student a clear idea of mission training objectives.

3.6.1.1.2. Q-. Did not thoroughly review student's training folder or correctly ascertain student's present level of training. Caused student to hurry pre-mission planning. Poorly prioritized training events. Training plan/scenario made poor use of time.

3.6.1.1.3. U. Did not review student's training folder. Did not ascertain student's present level of training. Did not assist student with pre-mission planning or did not allow time for questions. Did not prioritize training events. Failed to give student a clear idea of mission training objectives, methods, and sequence of events.

3.6.1.2. Area 21. Instructional Ability.

3.6.1.2.1. Q. Demonstrated proper instructor ability and communicated effectively. Provided appropriate guidance when necessary. Planned ahead, and provided accurate, effective, and timely instruction. Identified and corrected potentially unsafe maneuvers/situations.

3.6.1.2.2. Q-. Problems in communication or analysis degraded effectiveness of instruction. Accomplished the above tasks with minor discrepancies that did not affect safety or adversely affect student progress.

3.6.1.2.3. U. Unable to effectively communicate, provide timely feedback. Performed or taught improper procedures/techniques/tactics to the student. Did not provide corrective action when necessary. Did not plan ahead or anticipate student problems. Did not identify unsafe maneuvers/situations in a timely manner. Made no attempt to instruct.

3.6.1.3. Area 22. Instructor Knowledge.

3.6.1.3.1. Q. Demonstrated a high level of knowledge of all applicable aircraft systems, techniques, procedures, missions, publications and tactics to be performed. Completed appropriate training records accurately. Comments were clear and pertinent.

3.6.1.3.2. Q-. Minor errors/deficiencies in knowledge of above areas did not affect safety or adversely affect student progress. Minor errors or omissions in training records. Comments were incomplete or slightly unclear.

3.6.1.3.3. U. Lack of knowledge of publications or procedures seriously detracted from instructor effectiveness. Could not apply knowledge of above areas. Did not complete required forms or records. Comments were invalid, unclear, or did not accurately document performance.

3.6.1.4. Area 23. Briefings/Debriefings/Critique.

3.6.1.4.1. Q. Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. Showed an excellent ability during the critique to reconstruct the flight, offer mission analysis, and provide guidance where appropriate. Training grade reflected the actual performance of the student relative to the standard. Pre-briefed the student's next mission, if required.

3.6.1.4.2. Q-. Minor errors or omissions in briefings and/or critique did not affect safety or adversely affect student progress.

3.6.1.4.3. U. Briefings/debriefings were marginal or non-existent; major errors or omissions in briefings/debriefings. Did not review student past performance. Analysis of events or maneuvers was incomplete, inaccurate, or confusing. Training grade did not reflect actual performance of student. Overlooked or omitted major discrepancies. Incomplete pre-briefing of student's next mission, if required.

3.6.1.5. Area 24. Demonstration of Maneuvers/Procedures.

3.6.1.5.1. Q. Effectively demonstrated procedures and techniques. Provided concise, meaningful, and timely in-flight commentary. Had thorough knowledge of applicable aircraft systems, procedures, publications, and instructions.

3.6.1.5.2. Q-. Performed required maneuvers/procedures with minor deviations from prescribed parameters. In-flight commentary was sometimes unclear or poorly timed, interfering with student performance. Discrepancies in the above areas did not adversely affect safety or student progress.

3.6.1.5.3. U. Was unable to properly perform required maneuvers/procedures. Made major procedural errors. Did not provide in-flight commentary and/or in-flight

commentary was incorrect or unsafe. Insufficient knowledge of aircraft systems, procedures, and/or proper source material.

3.6.1.6. Areas 25 - 29. Reserved for future use.

Chapter 4

PILOT/COPILOT EVALUATIONS

4.1. General. All pilots (Ps) and copilots (CPs) require INSTM and QUAL evaluations. MSN qualified Ps/CPs require a MSN evaluation. CPs will be evaluated to the same area standards as Ps unless specified otherwise. CP crew coordination will not include duties and responsibilities expected of an aircraft commander. Instructors will demonstrate instructor duties on all periodic evaluations. (T-2)

4.1.1. Ps will fly MSN evaluations in their primary Mission Design Series (MDS). Recurring INSTM, QUAL, and/or MSN evaluations may be combined. (T-2)

4.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. P/CP specific areas are listed in this chapter. (T-2)

4.3. Instrument (INSTM). See [Table 4.1](#) and subparagraph below for required INSTM evaluation areas. Ensure requisites are completed per AFI 11-202, Vol 2, as supplemented. Conduct the INSTM evaluation in-flight or in a WST certified to accomplish specified events. (T2)

4.3.1. The evaluation profile will include: one precision; one non-precision approach; holding or procedure turn; circling pattern; missed approach; and simulated engine-out instrument approach. (T-2)

4.4. Qualification (QUAL). See [Table 4.1](#) and subparagraph below for required QUAL evaluation areas. Ensure requisites are completed per AFI 11-202, Vol 2, as supplemented. Conduct the QUAL evaluation in-flight or in a WST certified to accomplish specified events. (T2)

4.4.1. The evaluation profile will include: Visual Flight Rules (VFR) pattern; 100%, 50%, and 0% flap landing (only aircraft commanders/first pilots/instructors will accomplish 0% flap landings); touch-and-go procedures; simulated engine-out go-around, and simulated engine-out landing. (T-2)

4.5. Mission (MSN). See [Table 4.2](#) and subparagraphs below for required MSN evaluation areas. Ensure requisites are completed per AFI 11-202, Vol 2, as supplemented. Conduct the MSN evaluation in-flight or in a WST certified to accomplish specified events. (T-2)

4.5.1. The evaluation profile will include: tactical defensive maneuver(s), 30mm employment (live fire required for Ps), Precision Guided Munitions (PGM) employment (live or dry fire), tactical recovery/self-contained approach (SCA), and current special interest items. Dry fire profiles are adequate for Copilot evaluations. Loss of mission qualification does not affect basic qualification. (T-2)

4.5.2. Initial/Requalification Air-to-Air Refueling (AAR) Contact (Not required for recurring evaluations or RQ evaluations administered due to loss of currency). Ps must demonstrate the ability to accomplish a sustained fuel transfer per grading criteria of Area 60. Except for breakaway, evaluate emergency procedures verbally. (T-2)

4.6. Special Qualifications.

4.6.1. Initial/Requalification Night Vision Goggle (NVG) Airland (Not required for recurring evaluations or RQ evaluations administered due to loss of currency). Ps must demonstrate the ability to accomplish an NVG takeoff and landing.

Table 4.1. P/CP INSTM/QUAL Grading Areas.

Area	Notes	Area Name	QUAL	INSTM
30	2	Ground Operations/Taxi	X	
31	1	Takeoff	X	
32	5	Instrument Departure		X
33	2	En Route Navigation		X
34	2	Descent/Arrival Procedures		X
35	1	Holding/Procedure Turn		X
36	1, 4, 6	Precision Approach (Precision Approach Radar (PAR) or Instrument Landing System (ILS))		X
37	1, 4, 6	Non-Precision Approach (Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), Localizer (LOC), Non-Directional Beacon (NDB), Airport Surveillance Radar (ASR))		X
38	1	Circling/Side-Step Approach		X
39	1	Engine-Out Approach		X
40	1	Missed Approach/Go-Around		X
41	1	Engine-Out Go-Around	X	
42	2	Visual Flight Rules Procedures/Patterns	X	
43		Final Approach and Landing		
43a	1	100 Percent Flap Landing	X	
43b	1	50 Percent Flap Landing	X	
43c	2, 3	No Flap Landing	X	
43d	1	Engine-Out Landing	X	
43e	1	Touch-and-Go Landing	X	
44	2	After Landing/Engine Shutdown	X	
45	2	Fuel Conservation	X	

Area	Notes	Area Name	QUAL	INSTM
46-49		Reserved for future use		
Notes: <ol style="list-style-type: none"> 1. Required in-flight or WST certified for this event. 2. In-flight, WST certified for this event, or alternate method. 3. Aircraft commanders/instructors only. 4. Only one of the two required approaches may be controller directed (PAR/ASR). 5. Instrument Departures should transition to instruments below 100 feet. 6. Instrument Approaches should transition to outside references at/above approach minimums. 				

Table 4.2. P/CP MSN and Special Qualification Grading Areas.

Area	Notes	Area Name	MSN	Spec Qual
50	1	Tactical Navigation	X	
51	2	Prestrike	X	
52	1	Tweak Procedures	X	
53	1	Geometry Analysis	X	
54	1, 4	Target Acquisition	X	
55		Reserved for future use	X	
56	1, 4	Throttle Control	X	
57	1	Precision Guided Munitions (PGM) Employment	X	
58	2	Employment Tactics (Any Two): <ol style="list-style-type: none"> a. Close Air Support (CAS) <ol style="list-style-type: none"> 1. Convoy Escort 2. Urban Operations 3. Troops in Contact (TIC) 4. Fighter Integration b. Air Interdiction (AI) <ol style="list-style-type: none"> 1. Targets of Opportunity/Armed Reconnaissance 2. Preplanned c. Multi-weapon Engagement <ol style="list-style-type: none"> 1. PGM/30mm 2. PGM/PGM d. Force Protection <ol style="list-style-type: none"> 1. Airbase Defense 2. Facilities Defense 3. Helicopter Escort 4. Dual Target Attack 	X	

Area	Notes	Area Name	MSN	Spec Qual
59	1	Threat/Countermeasures	X	
60	1, 4	Tactical Recovery (SCA, overhead, downwind, random shallow/steep)	X	
61	1, 5	Air-to-Air Refueling a. Procedures b. Rendezvous c. Closure d. Contact/Fuel Transfer e. Breakaway f. Right Seat Refueling (CP, Instructor, Evaluator)	X	
62	2	Systems Operation/Knowledge/Limitations	X	
63	1	NVG Airland		X
64-99		Reserved for future use		
Notes: 1. Required in-flight or WST certified for this event. 2. In-flight, WST certified for this event, or alternate method. 3. Aircraft commanders/instructors only. 4. CPs perform CP duties only. 5. Required on or before initial MSN EVAL.				

Table 4.3. General Criteria.

Q	Altitude	± 200 feet
	Airspeed	+10/- 5 knots (but not less than Minimum Control Airspeed)
	Course	± 5 degrees/3 nautical mile (nm) (whichever is greater)
	Arc	± 2 nm
Q-	Altitude	± 300 feet
	Airspeed	+15/- 10 knots (but not less than Minimum Control Airspeed)
	Course	± 10 degrees/5 nm (whichever is greater)
	Arc	± 3 nm
U		Exceeded Q- limits

4.7. Grading Criteria.

4.7.1. Areas 1 through 19: Use general evaluation grading criteria in **Chapter 2** of this volume.

4.7.2. Areas 20 through 29: Use instructor grading criteria in **Chapter 3** (if applicable).

4.7.3. Areas 30 through 99: The following subparagraphs contain the evaluation grading criteria for the grading areas listed in **Table 4.1** and **Table 4.2**. **Note:** The general criteria in **Table 4.3**, apply during all phases of flight except as noted for specific events and instrument final approaches.

4.7.3.1. Area 30. Ground Operations/Taxi.

4.7.3.1.1. Q. Established and adhered to station, start engine, taxi, and take-off times to assure thorough preflight, check of personal equipment, crew/passenger briefings, etc. Accurately determined readiness of aircraft for flight. Performed all checks prior to takeoff.

4.7.3.1.2. Q-. Same as above except for minor procedural deviations that did not detract from mission effectiveness.

4.7.3.1.3. U. Failed to accurately determine readiness of aircraft for flight. Major deviations in procedure that would preclude safe mission accomplishment. Crew errors directly contributed to a late takeoff that degraded the mission or made it ineffective. Omitted checklist items.

4.7.3.2. Area 31. Takeoff.

4.7.3.2.1. Q. Maintained smooth, positive aircraft control throughout takeoff. Maintained centerline ± 15 ft. Properly applied takeoff data.

4.7.3.2.2. Q-. Minor deviations from published procedures, which did not affect safety of flight. Control was somewhat rough or erratic. Hesitant in application of procedures or corrections. Centerline ± 25 feet.

4.7.3.2.3. U. Takeoff was potentially dangerous. Exceeded aircraft/systems limitations. Failed to establish proper climb attitude. Excessive deviation from intended flight path. Exceeded Q- criteria.

4.7.3.3. Area 32. Instrument Departure.

4.7.3.3.1. Q. Performed departure as published/directed and complied with all restrictions or controlling agency instructions. Made all required reports. Applied course/heading corrections promptly. Demonstrated smooth, positive aircraft control.

4.7.3.3.2. Q-. Minor deviations in navigation occurred during departure. Slow to comply with controlling agency instructions or unsure of reporting requirements. Slow to apply course/heading corrections. Aircraft control was not consistently smooth and positive.

4.7.3.3.3. U. Failed to comply with published/directed departure, or controlling agency instructions. Accepted an inaccurate clearance. Aircraft control was erratic.

4.7.3.4. Area 33. En Route Navigation.

4.7.3.4.1. Q. Satisfactory capability to navigate using all available means. Used appropriate navigation procedures. Ensured Navigational Aids (NAVAIDs) were properly tuned, identified, and monitored. Complied with clearance instructions. Aware of position at all times. Remained within the confines of assigned airspace.

4.7.3.4.2. Q-. Minor errors in procedures/use of navigation equipment. Some deviations in tuning, identifying, and monitoring NAVAIDs were observed. Slow to comply with clearance instructions. Had some difficulty in establishing exact position and course. Slow to adjust for deviations in time and course.

4.7.3.4.3. U. Major errors in procedures/use of navigation equipment. Did not ensure NAVAIDs were tuned, identified and monitored. Could not establish position. Failed to recognize checkpoints or adjust for deviations in time and course. Did not remain within the confines of assigned airspace. Exceeded Q- criteria.

4.7.3.5. Area 34. Descent/Arrival Procedures.

4.7.3.5.1. Q. Performed descent as directed. Complied with all restrictions. Properly set altimeters and ensured NAVAIDs properly set.

4.7.3.5.2. Q-. Performed descent as directed with minor deviations that did not compromise mission safety. Slow to comply with controller instructions, set proper altimeter setting. Delayed in ensuring NAVAIDs were properly set. Slow to make corrections.

4.7.3.5.3. U. Performed descent with major deviations. Failed to follow controller instructions. Failed to ensure NAVAIDs or altimeters set properly. Erratic corrections were observed.

4.7.3.6. Area 35. Holding/Procedure Turn.

4.7.3.6.1. Q. Performed entry and holding in accordance with published procedures and directives. Ensured NAVAIDs set properly. Holding pattern limits exceeded by not more than:

4.7.3.6.1.1. Very High Frequency (VHF) Omnidirectional Range (VOR) Leg timing: ± 15 seconds

4.7.3.6.1.2. Tactical Air Navigation (TACAN): ± 1.5 nm

4.7.3.6.2. Q-. Performed entry and holding procedures with minor deviations. Delayed in ensuring NAVAIDs set properly. Holding pattern limit exceeded by not more than:

4.7.3.6.2.1. VOR Leg timing: ± 30 seconds.

4.7.3.6.2.2. TACAN: ± 2 nm.

4.7.3.6.3. U. Holding not in accordance with TOs, directives, or published procedures. Failed to ensure NAVAIDs set properly. Exceeded "Q-" holding pattern limits.

4.7.3.7. Area 36. Precision Approach (Precision Approach Radar (PAR) or Instrument Landing System (ILS)).

4.7.3.7.1. Precision Approach Radar (PAR).

4.7.3.7.1.1. Q. Approach was IAW published procedures. Smooth and timely response to controller's instructions. Complied with decision height. Position would have permitted a safe landing. Maintained glide path with only minor deviations.

4.7.3.7.1.1.1. Airspeed: +10/-5 knots.

4.7.3.7.1.1.2. Heading: Within 5 degrees of controller instructions.

4.7.3.7.1.2. Q-. Performed approach with minor deviations. Slow to make corrections or react to controller's instructions. Position permitted a safe landing. Improper glide path control. Initiated missed approach as directed or at decision height +50/-0 feet, if applicable.

4.7.3.7.1.2.1. Airspeed: +15/-5 knots.

4.7.3.7.1.2.2. Heading: Within 10 degrees of controller's instructions.

4.7.3.7.1.3. U. Approach not IAW TOs, directives or published procedures. Erratic corrections or did not react to controller's instructions. Did not comply with decision height and/or position would not have permitted a safe landing. Exceeded "Q-"limits.

4.7.3.7.2. Instrument Landing System Approach.

4.7.3.7.2.1. Q. Performed procedures as published and IAW applicable directives. Smooth and timely corrections to azimuth and glide slope. Complied with decision height and position permitted a safe landing.

4.7.3.7.2.1.1. Airspeed: +10/-5 Knots Indicated Air Speed (KIAS).

4.7.3.7.2.1.2. Glide slope/azimuth within one dot.

4.7.3.7.2.2. Q-. Performed procedures with minor deviations. Slow to make corrections or initiate procedures. Position would have permitted a safe landing. Initiated missed approach at decision height +50/-0 feet, if applicable.

4.7.3.7.2.2.1. Airspeed: +15/-5 KIAS.

4.7.3.7.2.2.2. Glide slope within one-dot low/two dots high.

4.7.3.7.2.2.3. Azimuth within one dot.

4.7.3.7.2.3. U. Performed procedures with major deviations. Erratic course/glide slope corrections. Did not comply with decision height or position would not have permitted a safe landing. Exceeded "Q-" criteria.

4.7.3.8. Area 37. Non-Precision Approach (Tactical Air Navigation (TACAN), Very High Frequency Omnidirectional Range (VOR), Localizer (LOC), Non-Directional Beacon (NDB), Airport Surveillance Radar (ASR)).

4.7.3.8.1. Q. Approach was IAW published procedures. Used appropriate descent rate to arrive at Minimum Decision Altitude (MDA) at or before Visual Descent Point (VDP). Position permitted a safe landing. Smooth and timely response to Airport Surveillance Radar (ASR) controller's instructions.

4.7.3.8.1.1. Airspeed: +10/-5 knots.

4.7.3.8.1.2. Heading: ± 5 degrees (ASR).

4.7.3.8.1.3. Course: ± 5 degrees at Missed Approach Point (MAP).

4.7.3.8.1.4. Localizer: Less than one dot deflection.

4.7.3.8.1.5. MDA: +100/-0 feet.

4.7.3.8.2. Q-. Performed approach with minor deviations. Arrived at MDA at or before the MAP, but past the VDP. Initiated missed approach/go-around as directed or appropriate. Slow to make corrections or react to ASR controller's instruction.

4.7.3.8.2.1. Airspeed: +15/-5 knots.

4.7.3.8.2.2. Heading: ± 10 degrees (ASR).

4.7.3.8.2.3. Course: ± 10 degrees at MAP.

4.7.3.8.2.4. Localizer: Within one dot deflection.

4.7.3.8.2.5. MDA: +150/-50 feet.

4.7.3.8.3. U. Approach not IAW TOs, directives or published procedures. Maintained steady-state flight below the MDA, even though the -50 foot limit was not exceeded. Could not land safely from approach and did not initiate missed approach/go-around when appropriate or directed. Exceeded Q- criteria. Erratic corrections or did not react to ASR controller's instructions.

4.7.3.9. Area 38. Circling/Side-Step Approach.

4.7.3.9.1. Q. Properly identified aircraft category for the approach and remained within the lateral limits for that category. Complied with controller's instructions. Attained runway alignment without excessive bank angles. Did not descend from the MDA until in a position to place the aircraft on a normal glide path or execute a normal landing.

4.7.3.9.1.1. Airspeed: +10/-5 knots.

4.7.3.9.1.2. Altitude: +100/-0 feet.

4.7.3.9.2. Q-. Slow to comply with controller's instructions. Attained runway alignment but occasionally required excessive bank angles or maneuvering.

4.7.3.9.2.1. Airspeed: +15/-5 knots.

4.7.3.9.2.2. Altitude: +150/-50 feet.

4.7.3.9.3. U. Did not properly identify aircraft category or exceeded the lateral limits of circling airspace. Did not comply with controller's instructions. Excessive maneuvering to attain runway alignment was potentially unsafe. Descended from the MDA before the aircraft was in position for a normal glide path or landing. Exceeded "Q-" criteria.

4.7.3.10. Area 39. Engine-Out Approach (Use approach criteria for the type of approach being flown and the following).

4.7.3.10.1. Q. Performed procedures IAW TOs and associated directives. Individual technique complied with established procedures. Proper control inputs were used to correct asymmetric condition. Aircraft was properly trimmed. Proper consideration was given to maneuvering with regard to the "dead" engine.

4.7.3.10.2. Q-. Minor deviations in procedures/aircraft control allowed the aircraft to occasionally be in uncoordinated flight. Unnecessary maneuvering due to minor errors in planning or judgment.

4.7.3.10.3. U. Major/unsafe deviations from procedures. Individual technique unsafe or in violation of established procedures. Aircraft was not properly trimmed. Aircraft control was erratic and consistently resulted in uncoordinated flight. Maneuvering with regard to the "dead" engine was potentially unsafe.

4.7.3.11. Area 40. Missed Approach/Go-Around.

4.7.3.11.1. Q. Executed missed approach IAW published procedures and restrictions. Initiated and performed go-around promptly. Complied with controller's instructions. Applied smooth control inputs. Attained and maintained a positive climb.

4.7.3.11.2. Q-. Executed missed approach with minor deviations to published procedures/directives. Was slow or hesitant to initiate go-around. Slow to respond to controller's instructions. Slightly over-controlled the aircraft.

4.7.3.11.3. U. Did not execute missed approach IAW TO, directives or published procedures. Did not comply with controller's instructions. Deviations or misapplication of procedures could have led to an unsafe condition. Exceeded "Q-" criteria.

4.7.3.12. Area 41. Engine-Out Go-Around (Use Area 43 criteria and the following).

4.7.3.12.1. Q. Applied smooth, coordinated control inputs. Rudder and aileron inputs were in the correct direction. Maneuvering appropriate with regard to the "dead" engine/Minimum Control Airspeed. Individual technique complied with established procedures.

4.7.3.12.2. Q-. Rudder and aileron inputs were in correct direction but some over/under control. Individual techniques were safe, but detracted from the maneuver.

4.7.3.12.3. U. Rudder and/or aileron inputs were incorrect. Maneuvering with regard to the "dead" engine/minimum control airspeed potentially unsafe. Failed to comply with/consider minimum control speeds. Individual technique unsafe or violated established procedures.

4.7.3.13. Area 42. Visual Flight Rules Procedures/Patterns.

4.7.3.13.1. Q. Adhered to published restrictions/local guidance. Performed traffic pattern and turn to final/final approach IAW TO procedures. Aircraft control was smooth and positive. Did not over/under-shoot final approach. Constantly cleared area of intended flight.

4.7.3.13.1.1. Airspeed: +10/-5 knots.

4.7.3.13.1.2. Pattern Altitude: ± 100 feet.

4.7.3.13.2. Q-. Minor deviations from published restrictions/local guidance. Performed traffic pattern and turn to final/final approach with minor deviations to procedures. Aircraft control was safe but not consistently smooth and positive. Over/under-shot final approach slightly but was able to intercept a normal glide path. Adequately cleared area of intended flight.

4.7.3.13.2.1. Airspeed: $+15/-5$ knots.

4.7.3.13.2.2. Pattern Altitude: ± 200 feet.

4.7.3.13.3. U. Major/unsafe deviations from published restrictions/local guidance. Did not perform traffic pattern and turn to final/final approach IAW TO, directives or published procedures. Displayed erratic aircraft control. Over/under-shot final approach by a wide margin requiring a go-around or potentially unsafe maneuvering on final. Did not clear area of intended flight. Exceeded "Q-" criteria.

4.7.3.14. Area 43. Final Approach and Landing. **Note:** The following criteria are written to generally apply to all landings. Flight examiners must apply these criteria judiciously to allow for the unique characteristics of each type of landing. Where runway/airfield lighting configuration, arresting cable placement, instrument procedures or TO limitations require an adjustment to the desired touchdown point, a simulated runway threshold will be identified and the grading criteria applied accordingly. For instrument approaches, the examinee should utilize a normal glide slope from either the decision height or from a point where visual acquisition of the runway environment is made.

4.7.3.14.1. Area 43a. 100 Percent Flap Landing.

4.7.3.14.1.1. Q. Performed landing as published/directed. Crossed threshold at threshold speed ± 5 knots at proper attitude. Smooth and positive aircraft control throughout round-out and flare. Touched down with no crab, and not more than 15 feet left or right of centerline. Complied with TO procedures for use of brakes and reverse thrust. Met the following criteria:

4.7.3.14.1.1.1. Touchdown Speed: ± 5 knots.

4.7.3.14.1.1.2. Touchdown Point: 1,000' – 2,000' from the actual/simulated runway threshold.

4.7.3.14.1.2. Q-. Performed landing with minor deviations to procedures as published/directed. Crossed threshold at threshold speed $+10/-5$ knots slightly high or low but no compromise of safety. Touched down not more than 25 feet left or right of centerline. Exceeded "Q" criteria but not the following:

4.7.3.14.1.2.1. Touchdown Speed: $+10/-5$ knots.

4.7.3.14.1.2.2. Touchdown Point: 0' – 1,000' or 2,001' – 3,000' from the actual/simulated runway threshold.

4.7.3.14.1.3. U. Landing not performed as published/directed. Crossed threshold excessively high or low and more than $+10/-5$ knots. Touched down excessively crabbed and more than 25 feet left or right of centerline. Failed to comply with

TO procedures for the use of brakes and reverse thrust. Exceeded “Q-“ criteria.

4.7.3.14.2. Area 43b. 50 Percent Flap Landing.

4.7.3.14.2.1. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.3. Area 43c. No Flap Landing.

4.7.3.14.3.1. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.4. Area 43d. Engine-Out Landing.

4.7.3.14.4.1. Use same criteria as Area 43a, 100 Percent Flap Landing.

4.7.3.14.5. Area 43e. Touch-and-Go Landing (Touchdown through Lift-off).

4.7.3.14.5.1. Q. Performed procedures in a timely manner and IAW TO and local directives. Smooth and positive control. Maintained runway centerline within 15 feet left or right throughout the touch and go.

4.7.3.14.5.2. Q-. Performed procedures with minor deviations. Aircraft control was safe, but not consistently smooth and positive. Delayed accomplishment of required checklists. Consistently left or right of centerline but within 25 feet.

4.7.3.14.5.3. U. Major deviations to procedures. Displayed erratic/unsafe aircraft control. Excessively delayed and/or misapplied required checklists. Allowed aircraft to drift/remain more than 25 feet left or right of centerline.

4.7.3.15. Area 44. After Landing/Engine Shutdown.

4.7.3.15.1. Q. Successfully reconfigured the aircraft IAW TO and instructions. Checklist accomplishment with no omitted required steps or prerequisites.

4.7.3.15.2. Q-. Same as above except minor procedural deviations that did not detract from mission effectiveness.

4.7.3.15.3. U. Failed to reconfigure the aircraft IAW TO and instructions. Major deviations in written procedures. Crew errors directly contributed to degrading the mission or making it ineffective. Omitted required checklist items.

4.7.3.16. Area 45. Fuel Conservation.

4.7.3.16.1. Q. Possessed a high level of knowledge of all applicable aircraft publications and other governing directives and understood how to apply both to enhance fuel conservation. Successfully applied fuel conservation procedures during the mission.

4.7.3.16.2. Q-. Possessed some knowledge of applicable aircraft publications and other governing directives and understood how to apply both to enhance fuel conservation. Successfully applied some fuel conservation procedures, but missed several opportunities to apply fuel conservation procedures during the mission.

4.7.3.16.3. U. Unaware of fuel conservation procedures. Failed to apply any fuel conservation procedures during the mission.

4.7.3.17. Areas 46 through 49. Reserved for future use.

4.7.3.18. Area 50. Tactical Navigation.

- 4.7.3.18.1. Q. Direct the airplane in the tactical environment utilizing all available resources to achieve mission accomplishment. Thorough knowledge of aircraft guidance/position utilizing sensors/navigation systems/radar.
- 4.7.3.18.2. Q-. Adequate knowledge of aircraft guidance/position utilizing sensors /navigation/radar. Minor errors or omissions that would not have adversely affected mission accomplishment.
- 4.7.3.18.3. U. Deviations of direction that resulted in mission failure. Improper use and knowledge of sensors/navigation equipment/radar.
- 4.7.3.19. Area 51. Prestrike.
 - 4.7.3.19.1. Q. Configured the aircraft for combat and completed all required checklists prior to crossing the combat-entry point IAW TO and instructions.
 - 4.7.3.19.2. Q-. Aircraft configuration or checklist completion caused minor delays to mission accomplishment.
 - 4.7.3.19.3. U. Failed to configure and/or accomplish required checklists prior to attempting munitions delivery.
- 4.7.3.20. Area 52. Tweak Procedures.
 - 4.7.3.20.1. Q. Coordinated with the crew to safely tweak IAW TO, instructions and procedures. Accurate, stable geometry allowed best tweak for conditions.
 - 4.7.3.20.2. Q-. Minor deviations from procedures or geometry, which did not cause an unsafe condition or an unusable tweak.
 - 4.7.3.20.3. U. Unsatisfactory knowledge and performance of tweak. Erratic aircraft control and/or deviations from TOs/instructions resulted in a potentially unsafe condition or an unusable tweak.
- 4.7.3.21. Area 53. Geometry Analysis.
 - 4.7.3.21.1. Q. Understand and made appropriate corrections to the variables which effect geometry as listed in TO and AFI.
 - 4.7.3.21.2. Q-. Minor deviations with no impact on mission.
 - 4.7.3.21.3. U. Improper corrections causing major deviations/delays to mission accomplishment.
- 4.7.3.22. Area 54. Target Acquisition (Except CP).
 - 4.7.3.22.1. Q. P will be able to coordinate with tactical crew to acquire the correct target/friendly position IAW TO, AFIs, and Rules of Engagement (ROE).
 - 4.7.3.22.2. Q-. Had minor difficulty accurately identifying targets and or unsure of aircraft position based on targets. Made minor errors that did not affect target acquisition.
 - 4.7.3.22.3. U. For the conditions listed in “Q” criteria, Ps crew coordination or lack of coordination contributed, or resulted in, inability to acquire target.
- 4.7.3.23. Area 55. Reserved for Future Use.

4.7.3.24. Area 56. Throttle Control (CP).

4.7.3.24.1. Q. Maintain nominal airspeed ± 3 knots and altitude ± 100 feet throughout engagements.

4.7.3.24.2. Q-. Maintain nominal airspeed ± 5 knots and altitude, ± 200 feet throughout engagements.

4.7.3.24.3. U. Exceeds “Q-“ criteria.

4.7.3.25. Area 57. Precision Guided Munitions (PGM) Employment.

4.7.3.25.1. Q. Completed PGM employment IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

4.7.3.25.2. Q-. Minor deviations from established PGM employment procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

4.7.3.25.3. U. Failed PGM employment critical component or could not conduct a satisfactory PGM employment. Individual technique was unsafe and/or in violation of established procedures.

4.7.3.26. Area 58. Employment Tactics.

4.7.3.26.1. Q. Referenced appropriate publications, manuals, TO, AFI, Order of Battle, ROE, Special Instructions, Air Tasking Order (ATO), and coordinate with Liaison Officers (LNO) to develop a comprehensive offensive employment plan and apply it in the aircraft.

4.7.3.26.2. Q-. Minor deviations from “Q” criteria that did not impair mission accomplishment.

4.7.3.26.3. U. Major deviations that lead to impairment of mission accomplishment.

4.7.3.27. Area 59. Threat/Countermeasures.

4.7.3.27.1. Q. Demonstrated satisfactory knowledge of defensive systems and thorough knowledge of tactics applicable to the mission. Applied appropriate tactics to avoid the threat and minimize exposure. Made timely and appropriate inputs to crew during mission.

4.7.3.27.2. Q-. Limited knowledge of defensive systems. Made minor errors in avoiding the lethal range of a given threat system. Slow to execute the proper evasive maneuver. Minor errors in threat analysis or tactics selection. Did not make timely inputs to crew during mission.

4.7.3.27.3. U. Knowledge of defensive systems was unsatisfactory. Did not avoid lethal range of given threat system. Did not execute an effective evasive maneuver when given an immediate threat. Failed to ensure mission effectiveness by not adequately analyzing or degrading threat(s). Not aware of appropriate tactics for specific threats or terrain.

4.7.3.28. Area 60. Tactical Recovery. **Note:** Includes SCAs, overheads, downwind, random steep/shallow, etc.

- 4.7.3.28.1. Q. Followed procedures as briefed and IAW TO, directives, or published procedures. Displayed smooth, positive control throughout the recovery. Aircraft was in position to intercept glide path for normal landing. Gave proper consideration to threat location and adjusted pattern accordingly. Consistently cleared area of intended flight.
- 4.7.3.28.2. Q-. Performed recovery with minor deviations to published procedures. Aircraft control was not consistently positive and smooth. Over/under-shot final approach slightly but was able to intercept glide path for normal landing.
- 4.7.3.28.3. U. Recovery not performed IAW TO, directives or published procedures. Displayed erratic aircraft control. Over/under-shot final approach, requiring a go-around or potentially unsafe maneuvering to intercept final. Failed to consider threat location or proximity and/or maneuvering could have placed the aircraft within lethal range of given threat system. Did not clear area of intended flight.
- 4.7.3.29. Area 61. Air-to-Air Refueling Procedures.
- 4.7.3.29.1. Q. Rendezvous effectively accomplished using proper procedures. Demonstrated effective/appropriate use of radio communications for briefed Emission Control option. Expeditiously established and maintained proper position. Aircraft control was positive and smooth. Maintained the contact position for 10 minutes (at least 5 minutes continuous) with no more than two pilot-induced disconnects.
- 4.7.3.29.2. Q-. Rendezvous delayed by improper techniques, procedures or radio communications. Slow to recognize and apply needed corrections to establish and maintain proper position. Aircraft control was not always positive and smooth, but adequate. Accomplished published/directed procedures with deviations or omissions that did not affect the successful completion of air refueling. Maintained the contact position for at least 10 minutes with no more than two pilot-induced disconnects.
- 4.7.3.29.3. U. Displayed lack of knowledge or familiarity with procedures to the extent that air refueling was or could have been jeopardized. Failed rendezvous as a result of improper procedures. Spent excessive time in trail. Aircraft control in the pre-contact/refueling position was erratic or unsafe. Made deviations or omissions that affected flight safety and/or the successful completion of the air refueling. Used unacceptable procedures. Performance caused more than two pilot-induced disconnects and/or delayed mission accomplishment.
- 4.7.3.30. Area 62. Systems Operation/Knowledge/Limitations.
- 4.7.3.30.1. Q. Demonstrated/explained a complete knowledge of aircraft systems operations/limitations and proper procedural use of systems.
- 4.7.3.30.2. Q-. Marginal knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of established procedures and was unaware of differences.
- 4.7.3.30.3. U. Unsatisfactory systems knowledge. Failed to demonstrate/explain the procedures for aircraft system operations.
- 4.7.3.31. Area 63. NVG Airland.

- 4.7.3.31.1. Use the following criteria for NVG Airland:
 - 4.7.3.31.1.1. Area 39 – Missed Approach/Go-Around.
 - 4.7.3.31.1.2. Area 31 – Takeoff.
 - 4.7.3.31.1.3. Area 43 – Final Approach and Landing.
- 4.7.3.31.2. Q. Takeoff, landing, and missed approach criteria listed were not exceeded. Displayed satisfactory knowledge of NVG Airland procedures. Thoroughly analyzed departure/landing runway and surrounding terrain.
- 4.7.3.31.3. Q-. Minor deviations in knowledge or published procedures. Errors did not affect safety or mission accomplishment.
- 4.7.3.31.4. U. Procedures not IAW flight manual, directives, or published procedures. Errors did not affect safety or mission accomplishment.
- 4.7.3.32. Areas 64 through 99. Reserved for Future Use.

Chapter 5

NAVIGATOR EVALUATIONS

5.1. General. Navigators (NAVs) require a combined QUAL/MSN evaluation. NAV maintaining only a basic qualification require a QUAL flight evaluation. Examinees must satisfactorily demonstrate the ability to perform all NAV duties safely and effectively, including the operation of appropriate aircraft systems, IAW applicable TO and directives. (T-2)

5.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. NAV specific areas are listed in this chapter. (T-2)

5.3. Requisites. Requisites for all NAV evaluations include Open and Closed book examinations (or formal school End-of-Course examinations if applicable), Boldface examination, and EPE. The various NAV evaluations are described in following paragraphs. (T-2)

5.3.1. QUAL Evaluations. After completion of the appropriate training, navigators may receive a QUAL evaluation enabling them to fly non-mission sorties. Thereafter, they require, at a minimum, recurring QUAL evaluations. See grading event criteria in [Chapter 2](#) and [Chapter 3](#), and [Table 5.1](#), Notes 4 and 5 for Basic Qual required evaluation areas. (T-2)

5.3.1.1. AC-130W navigators require a QUAL evaluation in any C-130-series aircraft or certified WST prior to the initial AC-130W mission evaluation. (T-2)

5.3.2. Initial/Requalification MSN Evaluation. Conduct initial or requalification MSN evaluations on missions consisting of live and dry fire, PGM employment and NAV-directed tactical recovery. The dry fire portion of the mission will include a close air support (CAS) scenario with a PGM engagement. See grading event criteria in [Chapter 2](#), [Chapter 3](#), and [Table 5.1](#). A QUAL evaluation will be conducted in conjunction with the INIT or RQ MSN evaluation if possible. (T-2)

5.3.2.1. A NAV directed tactical recovery includes SCA, Random Shallow, Random Steep, Penetration Descent, Visual Navigation, or any recovery in which the evaluator can properly assess Terminal Area Navigation skills. (T-2)

5.3.3. Periodic Qualification/Mission Evaluation. NAVs maintaining mission qualification require a periodic combined QUAL/MSN evaluation. Conduct the QUAL/MSN evaluation in the eligibility period corresponding to the earliest expiration date. QUAL/MSN evaluations will include all areas in [Chapter 2](#) and [Chapter 3](#) (if applicable) and [Table 5.1](#). (T-2)

5.3.3.1. Periodic evaluations will consist of a live fire, dry fire, a PGM employment (PGM employment may be conducted live or dry), and a NAV directed tactical recovery. (T-2)

5.3.4. Dual Qualified Nav/Combat Systems Officer (CSO) MSN Evaluations. See Nav/CSO Dual Qual requirements in [Chapter 6](#).

5.3.5. Special Qualification Evaluations. Not applicable.

Table 5.1. NAV Grading Areas.

Area	Notes	Area Name	QUAL	MSN
100	2	Departure	X	
101	2	Approach/Landing	X	
102	2	Flight Plan/Charts	X	
103	2	Fuel Planning	X	
104	2	Navigation Procedures	X	
105	2	Radio Navigation	X	
106	2	Radar Navigation/Weather Avoidance	X	
107	2	Navigation and Avionics Systems	X	
108	2	Compass Deviation/True Airspeed (TAS)	X	
109	2	Dead Reckoning (DR)/Rating of Navigational Computers	X	
110	2	Course and Estimated Time of Arrival (ETA) Tolerance	X	
111	2	Fuel Management	X	
112		Air-to-Air Refueling Procedures		X
113	2	Briefings		X
114	2	Defensive Systems/Tactics/Threat Analysis/Avoidance		X
115	2	Fire Control Systems and Displays/Sensor Systems/Weapons Systems		X
116	2	Employment Tactics		X
117	1	Communication Procedures/Radio Transmission – Usage and Discipline		X
118	2	Target Acquisition/Confirmation		X
119	2	Reconnaissance/Search		X
120	2	Degraded Operations		X
121	2	NAV-Directed Tactical Recovery Procedures		X
122	2	Weapons Employment		X
123-149		Reserved for future use		
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method.				

5.4. Grading Criteria.

5.4.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

5.4.2. Areas 20 through 29: Use instructor evaluation grading criteria in [Chapter 3](#) of this volume (if applicable).

5.4.3. Areas 100 through 149: The following subparagraphs contain the evaluation criteria for the areas listed in **Table 5.1**.

5.4.3.1. Area 100 Departure (QUAL).

5.4.3.1.1. Q. Monitored headings, airspeeds, altitudes and aircraft position throughout departure. Used an instrument departure procedure and/or appropriate scale departure area chart. Provided headings, ETA, and other required information in a timely manner. Monitored appropriate radios and clearances to ensure crew compliance. Provided updated information when the clearance caused a change in the planned departure. Ensured terrain clearance during departure by use of all available aids and the area chart.

5.4.3.1.2. Q-. Monitored aircraft position, but slow to provide headings, ETA, or other required information. Performance did not degrade mission accomplishment or compromise flight safety.

5.4.3.1.3. U. Did not monitor departure headings, airspeeds or altitudes. Unaware of aircraft position and unable to provide updated information when required. Did not use an instrument departure procedure and/or an appropriate scale departure area chart. Allowed major deviations that degraded mission accomplishment or compromised safety. Did not ensure terrain clearance during the departure. No area chart available.

5.4.3.2. Area 101. Approach/Landing (QUAL).

5.4.3.2.1. Q. Monitored aircraft position, approach instructions and primary approach navigation aids. Provided headings, ETAs and other information to the P as required. Thoroughly understood approach and missed approach procedures. Ensured terrain clearance during approach by use of all available aids and area chart.

5.4.3.2.2. Q-. Monitored aircraft position but did not fully understand approach instructions/procedures. Slow to provide headings, ETAs or other appropriate information.

5.4.3.2.3. U. Failed to monitor aircraft position. Did not ensure terrain clearance during the approach. Did not use appropriate chart.

5.4.3.3. Area 102. Flight Plan/Charts (QUAL).

5.4.3.3.1. Q. Completed a flight plan IAW applicable directives. Selected current navigation charts of a proper scale and type of the sortie profile. Charts were constructed IAW current directives. Demonstrated proper manual flight planning procedures, if required.

5.4.3.3.2. Q-. Flight plan/charts contained minor errors or omissions that would not have adversely affected mission accomplishment.

5.4.3.3.3. U. Flight plan not accomplished, incomplete, or contained major errors that adversely affected mission accomplishment. Could not demonstrate manual procedures, or failed to review computer generated flight plan.

5.4.3.4. Area 103. Fuel Planning (QUAL).

5.4.3.4.1. Q. Completed a fuel plan IAW applicable directives. Used correct entering arguments (temp dev, altitudes, drag index, gross weight (GW), cargo weight, etc.) for manual or computer generated fuel plans. Correctly computed an Equal Time Point (ETP), when required.

5.4.3.4.2. Q-. Fuel plan contained minor errors or omissions that would not have adversely affected mission accomplishment.

5.4.3.4.3. U. Fuel plan not accomplished, incomplete, or contained major errors. ETP not completed or contained major errors or omissions.

5.4.3.5. Area 104. Navigation Procedures (QUAL).

5.4.3.5.1. Q. Certain of exact aircraft position. Remained within 3 nm of course centerline or planned deviation (**Exceptions:** threat avoidance, weather deviation, Air Traffic Control (ATC) assigned heading, time control, etc.). Thorough knowledge of en route time status in relation to objective area. Complied with all altitude restrictions. Adhered to all airspace restrictions.

5.4.3.5.2. Q-. Uncertain of exact aircraft position due to marginal navigational procedures. Flew 3 to 5nm from course without the above exceptions. Better awareness of required timing events or en route time status could have avoided excessive, unplanned maneuvering.

5.4.3.5.3. U. Exceeded 5 nm during en route navigation without the above exceptions. Was unable to maintain position awareness throughout most of the route. Unable to accurately assess required timing or unaware of mission time status, jeopardizing mission accomplishment. Violated airspace restrictions. Descended below minimum altitude restrictions.

5.4.3.6. Area 105. Radio Navigation (QUAL).

5.4.3.6.1. Q. Accurately tuned, identified, and interpreted readings of TACANs, VORs or Non-Directional Beacons (NDBs).

5.4.3.6.2. Q-. Better use of radio aids could have enhanced navigation. Displayed weakness in fixing or plotting procedures.

5.4.3.6.3. U. Unable to accurately tune and identify radio aids. Did not understand VOR/TACAN/NDB bearing procedures or was unable to obtain position by means of radio aids.

5.4.3.7. Area 106. Radar Navigation/Weather Avoidance (QUAL).

5.4.3.7.1. Q. Demonstrated thorough knowledge and understanding of radar equipment. Used correct procedures for radar operation and weather avoidance procedures. Maintained proper distance from adverse weather.

- 5.4.3.7.2. Q-. Demonstrated adequate knowledge of equipment, but occasionally used improper operating procedures. Did not update radar/weather analysis while avoiding known weather. Had difficulty identifying radar returns. Weather avoidance was safe with minor deviation from prescribed procedures.
- 5.4.3.7.3. U. Displayed unsatisfactory knowledge of radar equipment. Used improper operating procedures that were potentially harmful to system components. Failed to correctly interpret scope returns. Displayed unsatisfactory knowledge of weather avoidance procedures.
- 5.4.3.8. Area 107. Navigation and Avionics Systems (QUAL).
- 5.4.3.8.1. Q. Demonstrated a thorough knowledge of onboard navigation system operating procedures. Effectively used navigation systems to direct the aircraft and update system as required.
- 5.4.3.8.2. Q-. Demonstrated a basic knowledge of onboard navigation systems and/or avionics systems. Made minor errors in operation/interpretation of navigation system data. More selective updating could have increased system effectiveness.
- 5.4.3.8.3. U. Displayed inadequate knowledge of onboard navigation systems procedures. Improper operation procedures could have resulted in damage to equipment or affected mission accomplishment. Failed to update or correctly interpret navigation system data.
- 5.4.3.9. Area 108. Compass Deviation/True Airspeed (TAS) (QUAL).
- 5.4.3.9.1. Q. Correctly computed compass deviation within 2 degrees of actual. TAS check accomplished on time and error did not exceed 5 knots.
- 5.4.3.9.2. Q-. Minor errors in readings or computations. Computations were within 3 degrees of actual. Minor errors in readings or computations. Error did not exceed 10 knots. Completed TAS check late.
- 5.4.3.9.3. U. Did not accomplish deviation check or exceeded "Q-" criteria. Did not accomplish TAS check or error exceeded 10 knots.
- 5.4.3.10. Area 109. Dead Reckoning (DR)/Rating of Navigational Computers (QUAL).
- 5.4.3.10.1. Q. Made effective use of DR/Rating of navigational computers during aircraft positioning. Computed or plotted positions within 5 nm, selecting the most reliable information.
- 5.4.3.10.2. Q-. Occasionally did not identify the navigational computer providing the most reliable information or used improper DR procedures resulting in erroneous ETAs or headings. Computed or plotted position error did not exceed 10 nm.
- 5.4.3.10.3. U. Was unable to use DR/Rate navigational computers effectively. Computed or plotted position error exceeded "Q-" criteria.
- 5.4.3.11. Area 110. Course and Estimated Time of Arrival (ETA) Tolerance (QUAL).
- 5.4.3.11.1. Q. Remained within 5 nm of course centerline, or within tolerances specified for Required Navigation Performance (RNP) airspace (if applicable),

whichever is less. ETA/Revised ETA (RETA) were within 2 minutes of actual times of arrival (ATA).

5.4.3.11.2. Q-. Remained within 10 nm of course centerline. ETAs/RETAs were within 3 minutes of ATA.

5.4.3.11.3. U. Exceeded "Q-" criteria and/or evaluator had to alter aircraft heading to remain within course tolerance, clear special use airspace, or correctly deviate around weather.

5.4.3.12. Area 111. Fuel Management (QUAL).

5.4.3.12.1. Q. Maintained fuel management IAW directives. Kept P advised and monitored fuel status.

5.4.3.12.2. Q-. Adequate fuel management with minor computation errors noted. Did not adequately update the Pilot on fuel status.

5.4.3.12.3. U. Failed to demonstrate an understanding of fuel management procedures. Fuel computations not accomplished or contained significant errors. Failed to inform or monitor P of fuel status.

5.4.3.13. Area 112. Air-to-Air Refueling Procedures (QUAL).

5.4.3.13.1. Q. Effectively accomplished rendezvous and air refueling procedures. Planned optimum use of all available rendezvous aids. Thorough and complete knowledge of in-flight air refueling procedures.

5.4.3.13.2. Q-. Overlooked use of some rendezvous aids, resulting in a delayed or inefficient rendezvous. Knowledge was sufficient to accomplish rendezvous and air refueling.

5.4.3.13.3. U. Displayed lack of knowledge or familiarity with the checklist, equipment, and procedures. Limited use of rendezvous aids adversely affected the rendezvous.

5.4.3.14. Area 113. Briefings (Mission).

5.4.3.14.1. Q. Gave complete, concise mission briefings. Performed thorough and concise briefs in-flight for prestrike checklists and applicable mission changes.

5.4.3.14.2. Q-. Minor errors and omissions of briefing items that did not adversely affect mission accomplishment.

5.4.3.14.3. U. Major errors or omissions in briefing that resulted in loss of crew situational awareness and performance that had a major negative effect on mission accomplishment.

5.4.3.15. Area 114. Defensive Systems/Tactics/Threat Analysis/Avoidance (Mission).

5.4.3.15.1. Q. Had thorough knowledge of necessary defensive systems/tactics applicable to the mission. Applied appropriate tactics to avoid the threat and minimize exposure. Made timely and appropriate inputs to crew during mission. Able to plot threats in-flight, and formulate a plan of action to avoid a given threat.

5.4.3.15.2. Q-. Limited knowledge of defensive systems. Minor errors in tactics selection. Was unfamiliar with the appropriate tactic for a given scenario. Did not make timely inputs to crew during mission. Made minor errors in plotting and avoiding a given threat.

5.4.3.15.3. U. Knowledge of defensive systems was unsatisfactory. Inputs were missing or inaccurate. Major errors in tactics selection would have resulted in an unsuccessful mission. Was unable to plot and avoid a given threat. Failed to ensure mission effectiveness by not adequately analyzing or degrading threat(s).

5.4.3.16. Area 115. Fire Control Systems and Displays/Sensor Systems/Weapons Systems (Mission).

5.4.3.16.1. Q. Had a thorough knowledge of onboard Fire Control Systems/Sensor Systems/Weapons systems. Effectively used all systems to direct weapons delivery/navigation. Effectively interpreted sensor data/markings devices. Understood how each component incorporated within the Fire Control System.

5.4.3.16.2. Q-. Had only a basic knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Made minor errors operation/interpretation of Fire Control System data. Made minor errors in interpretation of sensor data/markings devices. More selective interpretation could have increased system effectiveness.

5.4.3.16.3. U. Displayed inadequate knowledge of onboard Fire Control Systems/Sensor Systems/Weapons Systems. Improper operation procedures could have resulted in damage to equipment or negatively affected mission accomplishment. Unable to effectively interpret sensor data/markings devices.

5.4.3.17. Area 116. Employment Tactics (Mission).

5.4.3.17.1. Q. Thorough coordination with crew and LNO to develop a comprehensive offensive employment plan and apply it during the mission. Knowledgeable of appropriate publications, manuals, TOs, AFI, Order of Battle, ROE, Special Instructions, Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME), and ATO. Demonstrated the ability to conduct (as required by mission profile) preplanned/on call close air support (CAS), air interdiction, reconnaissance, fixed-or rotary-wing integration, armed escort, and force protection measures. Effectively conducted combat/peacetime calls-for-fire IAW published procedures.

5.4.3.17.2. Q-. Basic coordination with crew and LNOs to develop an offensive employment plan with minor errors and/or omissions, but did not adversely affect mission accomplishment. Had some difficulty with finding relevant employment data from appropriate publications. Minor errors and/or omissions in CAS/air interdiction/reconnaissance/integration/armed escort/force protection that did not prevent mission success or contribute to mission failure. Minor errors in combat/peacetime calls-for-fire terminology or procedures that did not prevent mission success or jeopardize safety of aircrew or ground personnel.

5.4.3.17.3. U. Did not understand or failed to coordinate an offensive employment plan. Could not identify or find employment guidance in appropriate publications.

Failed to conduct CAS/air interdiction/reconnaissance/integration/armed escort/force protection during the mission that resulted negatively on mission accomplishment, or contributed to mission failure. Errors in combat/peacetime calls-for-fire procedures or terminology which prevented mission success or otherwise jeopardized safety of aircrew or ground personnel.

5.4.3.18. Area 117. Communication Procedures/Radio Transmission – Usage and Discipline (Mission).

5.4.3.18.1. Q. Complete knowledge of and compliance with communications procedures. Internal and external communications were concise, accurate, and effectively used to direct actions by the crew to update appropriate agencies of the tactical situation.

5.4.3.18.2. Q-. Minor terminology errors or omissions occurred, but did not significantly detract from situational awareness, threat warning, or mission accomplishment. Extraneous comments over primary and secondary radios presented minor distractions.

5.4.3.18.3. U. Unsatisfactory knowledge of/or failure to comply with communications procedures. Radio communications over primary/secondary radios were inadequate or excessive. Inaccurate or confusing terminology significantly detracted from situational awareness, threat warning, or mission accomplishment.

5.4.3.19. Area 118. Target Acquisition/Confirmation (Mission).

5.4.3.19.1. Q. Demonstrated ability to accurately identify targets and analyze aircraft position based on these targets. Quickly and accurately confirmed targets for engagement.

5.4.3.19.2. Q-. Ability to accurately identify targets was slow and was unsure of aircraft position. Slow to confirm targets for engagement. Minor errors and omissions did not adversely affect target acquisition or confirmation.

5.4.3.19.3. U. Could not identify or identified the wrong target. Did not know aircraft position in relation to targets. Failed to confirm target, had to be repeatedly prompted to confirm, or confirmed the wrong target.

5.4.3.20. Area 119. Reconnaissance/Search (Mission).

5.4.3.20.1. Q. Thorough knowledge of various methods used for searching. Provided accurate visual picture and situational awareness of ground terrain and movement. Proper use of sensors and aircraft position to complete search tasking.

5.4.3.20.2. Q-. Adequate knowledge of searching methods. A better choice of techniques, interpretation or sensor usage, could have improved accuracy and speed.

5.4.3.20.3. U. Unable to apply search methods to complete search tasking. Unsatisfactory knowledge of search techniques, interpretation and sensor usage.

5.4.3.21. Area 120. Degraded Operations (Mission).

- 5.4.3.21.1. Q. Thorough understanding of impacts of degraded operations and how to compensate for degraded equipment to achieve mission accomplishment. Displayed awareness of operational restrictions associated with degraded systems.
- 5.4.3.21.2. Q-. Adequate knowledge of impacts and compensation for degraded operation. Minor errors/omissions that did not adversely affect mission accomplishment.
- 5.4.3.21.3. U. Unsatisfactory knowledge of degraded operations, restrictions, and/or compensation that adversely affected mission accomplishment.
- 5.4.3.22. Area 121. NAV-Directed Tactical Recovery Procedures (Mission).
 - 5.4.3.22.1. Q. Complied with all published procedures. Successfully directed the aircraft to a position where a safe landing could be made. Used proper terminology; instructions were clear and concise during the entire approach.
 - 5.4.3.22.2. Q-. Briefing was incomplete or deviated from established procedures. Required excessive course corrections on final approach, but directed the aircraft to a point where a safe landing could be made.
 - 5.4.3.22.3. U. Had unsatisfactory knowledge of recovery procedures. Unable to direct the aircraft to a point from which a safe landing could be made.
- 5.4.3.23. Area 122. Weapons Employment (Mission).
 - 5.4.3.23.1. Q. Thorough understanding of all weapons (PGM/gun).
 - 5.4.3.23.2. Q-. Demonstrated some knowledge of weapons.
 - 5.4.3.23.3. U. Displayed a lack of understanding of weapons.
- 5.4.3.24. Areas 123 - 149. Reserved for Future Use.

Chapter 6

COMBAT SYSTEMS OPERATOR (CSO) EVALUATIONS

6.1. General. The criteria contained here and in [Chapter 2](#) apply to all CSO flight evaluations.

6.2. Performing Evaluator Duties. Dual-qualified NAV/CSOs may administer NAV and CSO evaluations simultaneously as long as either the NAV or CSO examinees are qualified.

6.3. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. CSO specific areas are listed in this chapter. (T-2)

6.3.1. Initial and Requalification Mission Evaluation. Evaluation will include all areas in [Chapter 2](#), [Chapter 3](#) (if applicable), and [Table 6.1](#). Administer the evaluation during a mission consisting of a live and dry fire. The dry fire portion of the mission will include a CAS scenario with a PGM engagement. (T-2)

6.3.1.1. CSO Periodic Evaluations. Periodic MSN evaluations will include all areas in [Chapter 2](#), [Chapter 3](#) (if applicable), and [Table 6.1](#). Live and dry fire procedures will be evaluated on all periodic evaluations. (T-2)

6.3.1.2. AC-130 Dual Qualified Nav/CSO QUAL/MSN Evaluations. Enter a separate flight phase entry in Section II of the AF Form 8/8A for the NAV and CSO portions with the appropriate dates. For dual qualified Nav/CSO evaluations, designate the crew position in Section I as NAV. (T-2)

6.3.1.2.1. Initial. Navigators and CSOs already qualified in one position, and selected to maintain dual qualification, must satisfy the initial evaluation requirements for the position in which they are upgrading. (T-2)

6.3.1.2.2. Recurring. If possible, complete a combined evaluation during the earliest eligibility period. Evaluate equipment preflight, and live fire in the CSO position. Evaluate all other events in the NAV position. Separate evaluations are authorized if unable to complete a combined evaluation. (T-2)

6.3.2. Special Qualification Evaluations. Not applicable.

6.4. Grading Criteria.

6.4.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

6.4.2. Areas 20 through 29: Use instructor evaluation grading criteria in [Chapter 3](#) of this volume (if applicable).

Table 6.1. CSO Grading Areas.

Area	Notes	Area Name
150	2	Fire Control System/Displays
151	2	Tactical Navigation
152	2	Target Acquisition/Sensor Employment
153	2	Weapons Employment
154	1	Tweak Procedures
155	2	Reconnaissance/Search
156	1	Close Air Support
157	1	Interdiction
158	2	Force Protection
159	2	Poststrike
160	2	Degraded Procedures
161	2	Local Range/Aerodrome Procedures and Restrictions
162	1	Communication Procedures/Radio Transmission
163-199		Reserved for Future Use
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method.		

6.4.3. Areas 150 through 199: The following subparagraphs contain the evaluation grading criteria for the areas listed in **Table 6.1**.

6.4.3.1. Area 150. Fire Control System/Displays.

6.4.3.1.1. Q. Had a thorough knowledge of onboard Fire Control Systems. Effectively used all systems to direct weapons delivery. Understood how each component incorporated within the Fire Control System.

6.4.3.1.2. Q-. Had only a basic knowledge of onboard Fire Control Systems. Made minor errors operation/interpretation of Fire Control System data. More selective interpretation could have increased system effectiveness.

6.4.3.1.3. U. Displayed inadequate knowledge of onboard Fire Control Systems. Improper operation procedures could have resulted in damage to equipment or affected mission accomplishment. Failed to correctly interpret Fire Control System data.

6.4.3.2. Area 151. Tactical Navigation.

6.4.3.2.1. Q. Directed the airplane in the tactical environment utilizing all available resources to achieve mission accomplishment. Thorough knowledge of aircraft guidance/position utilizing sensors/navigation systems.

6.4.3.2.2. Q-. Adequate knowledge of aircraft guidance/position utilizing sensors/navigation systems. Minor errors or omissions that would not have adversely affected mission accomplishment.

6.4.3.2.3. U. Deviations of direction that resulted in mission failure. Improper use and knowledge of sensors/navigation equipment systems.

6.4.3.3. Area 152. Target Acquisition/Sensor Employment.

6.4.3.3.1. Q. Demonstrated ability to accurately identify targets using sensors and analyze aircraft position based on these targets. Thorough knowledge of sensor capabilities for selected target. Used best sensor/combination for acquisition and employment based on targets, illumination, weather, threats, slant range and identification of marking devices.

6.4.3.3.2. Q-. Minor difficulty accurately identifying targets and or unsure of aircraft position based on targets. Minor sensor selection errors that did not affect mission accomplishment.

6.4.3.3.3. U. Unable to identify target or identified the wrong target. Selected an inappropriate sensor for the conditions listed in Q criteria that contributed, or resulted in, inability to acquire target or accomplish the mission.

6.4.3.4. Area 153. Weapons Employment.

6.4.3.4.1. Q. Demonstrated thorough knowledge of the appropriate selection and use of weapons and ammunition to achieve mission accomplishment. This includes various types of rounds and fuse settings for the best results on various targets, inputs to fire control system, and in-flight decision making for the usage and selection of rounds/guns/fuses.

6.4.3.4.2. Q-. Adequate knowledge weapon/ammunition usage. Minor errors and omissions resulting in delayed or incomplete damage. May not have used the best weapon/ammunition usage and/or employment techniques, but satisfactorily completed mission objectives.

6.4.3.4.3. U. Limited knowledge of weapon/ammunition usage. Selected inappropriate weapon/ammunition for the mission tasking that resulted in mission failure.

6.4.3.5. Area 154. Tweak Procedures.

6.4.3.5.1. Q. Demonstrated proper tweak procedures that would produce lethal effects on a target.

6.4.3.5.2. Q-. Demonstrated acceptable tweak procedures that would produce minimal effects on a target.

6.4.3.5.3. U. Tweak procedures employed would not produce effects on a target.

6.4.3.6. Area 155. Reconnaissance/Search.

6.4.3.6.1. Q. Thorough knowledge of various methods used for searching. Provided accurate visual picture and situational awareness of ground terrain and movement. Proper use of sensors and aircraft position to complete search tasking.

6.4.3.6.2. Q-. Adequate knowledge of searching methods. A better choice of techniques, interpretation or sensor usage, could have improved accuracy and speed.

6.4.3.6.3. U. Unable to apply search methods to complete search tasking. Unsatisfactory knowledge of search techniques, interpretation and sensor usage.

6.4.3.7. Area 156. Close Air Support.

6.4.3.7.1. Q. Effective/timely knowledge and performance of Close Air Support. Used range and bearing, laser sparkle, marking devices, and/or incoming radio, in determining the position of friendly forces versus target location(s). Coordinated with P, NAV, and sensors to ensure timely and accurate firepower to assist friendly units or troops in contact.

6.4.3.7.2. Q-. Limited knowledge and performance of Close Air Support. Excessive time in identifying friendly forces and target locations. Made minor coordination/omission errors that delayed fire support, but fire support was still effective.

6.4.3.7.3. U. Failed to successfully perform Close Air Support tasking. Misidentified or failed to locate friendly forces and/or enemy forces. Engaged wrong target and/or friendly positions. Lack of knowledge/performance resulted in delayed fire support to such an extent, that fire support did not achieve mission objective.

6.4.3.8. Area 157. Interdiction.

6.4.3.8.1. Q. Demonstrated ability to use sensors, charts and/or imagery to identify the confirmation points and target. Selected appropriate employment to ensure desired results. Identified target in less than 1 orbit.

6.4.3.8.2. Q-. Minor errors that delayed identification of confirmation points and targets. May not have used the best identification and/or employment techniques, but satisfactorily completed mission objectives. Identification of target took between 1 to 3 orbits.

6.4.3.8.3. U. Was unable to identify targets or confirmation points. Engaged wrong targets. Could not complete mission objectives due to inappropriate identification and/or employment techniques. Exceeded "Q-" criteria.

6.4.3.9. Area 158. Force Protection.

6.4.3.9.1. Q. Thorough knowledge of airbase defense, facility defense, fighter/helicopter escort. Ability to plan coordinate and reference appropriate publications on force protection.

6.4.3.9.2. Q-. Minor errors and/or omissions in force protection procedures or knowledge of operations that did not adversely affect mission accomplishment.

6.4.3.9.3. U. Unfamiliar with force protection planning or execution. Errors and omissions resulted in mission failure.

6.4.3.10. Area 159. Poststrike.

6.4.3.10.1. Q. Accurately completed all forms/reports/logs. Ensured all mission data is stored and recorded properly. Accurately recorded and stored Battle Damage Assessment (BDA)/ Digital Video Recorder (DVR) media.

6.4.3.10.2. Q-. Minor errors made in completed forms/reports/logs. Minor errors in mission data inputs. BDA/DVR recording was degraded due to operator error.

6.4.3.10.3. U. Failed to complete required forms. Due to operator error/omission, failed to record mission data and/or BDA/DVR recording.

6.4.3.11. Area 160. Degraded Procedures.

6.4.3.11.1. Q. Thorough understanding of impacts of degraded operations and how to compensate for degraded equipment to achieve mission accomplishment. Displayed awareness of operations restrictions associated with degraded systems.

6.4.3.11.2. Q-. Adequate knowledge of impacts and compensation for degraded operation. Minor errors/omissions that did not adversely affect mission accomplishment.

6.4.3.11.3. U. Unsatisfactory knowledge of degraded operations, restrictions, and/or compensation that adversely affected mission accomplishment.

6.4.3.12. Area 161. Local Range/Aerodrome Procedures and Restrictions.

6.4.3.12.1. Q. Complete knowledge of local ranges/aerodrome procedures and restrictions. Complied, advised, and coordinated all local range, special use airspace and airfield requirements during flight.

6.4.3.12.2. Q-. Limited knowledge of local ranges/aerodrome procedures and restrictions. Minor errors and omissions that did not jeopardize flight safety. Slow to advise, coordinate or comply with in-flight local range/aerodrome requirements.

6.4.3.12.3. U. Unfamiliar with local range and aerodrome procedures. Unable to comply, coordinate, or advise with local range and airfield procedures.

6.4.3.13. Area 162. Communication Procedures/Radio Transmission (Mission).

6.4.3.13.1. Q. Complete knowledge of and compliance with communications procedures. Internal and external communications were concise, accurate, and effectively used to direct actions by the crew to update appropriate agencies of the tactical situation.

6.4.3.13.2. Q-. Minor terminology errors or omissions occurred, but did not significantly detract from situational awareness, threat warning, or mission accomplishment. Extraneous comments over primary and secondary radios presented minor distractions.

6.4.3.13.3. U. Unsatisfactory knowledge of/or failure to comply with communications procedures. Radio communications over primary/secondary radios

were inadequate or excessive. Inaccurate or confusing terminology significantly detracted from situational awareness, threat warning, or mission accomplishment.

6.4.3.14. Areas 163 through 199. Reserved for Future Use.

Chapter 7

FLIGHT ENGINEER EVALUATIONS

7.1. General. Flight Engineers (FE) require QUAL and MSN evaluations. After completion of the appropriate training, FE may receive a QUAL evaluation enabling them to fly on non-mission sorties (i.e. no dry/live fire). FEs require an initial qualification evaluation in any C130-series aircraft or certified WST prior to mission evaluations. (T-2)

7.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. FE specific areas are listed in this chapter. (T-2)

7.3. Combined Qualification/Mission (QUAL/MSN). FEs maintaining mission qualification require periodic QUAL/MSN evaluations. See grading event criteria in [Chapter 2](#), [Chapter 3](#), and [Table 7.1](#). (T-2)

7.3.1. Initial/Requalification MSN. FEs will complete open and closed book requisite examinations or formal-school end-of-course examinations. Administer the evaluation on a live fire mission. Include as a minimum: a complete preflight, operation of aircraft systems, accomplishing a tactical recovery/SCA, and performance of other assigned duties. A QUAL evaluation will be conducted in conjunction with the INIT or RQ MSN evaluation if possible. (T-2)

7.3.2. Periodic. Requirements are the same as the initial evaluation, except the evaluation may be administered on a dry-fire mission. (T-2)

7.4. Grading Criteria.

Table 7.1. FE Grading Areas.

Area	Notes	Area Name	QUAL	MSN
200	2	Takeoff and Landing Data (TOLD)	X	
201	2	Ground Support Equipment	X	
202	2	Refuel/Defuel	X	
203	1	Before Starting Engines/Starting Engines	X	
204	1	Before Taxi/Taxi	X	
205	1	Before Takeoff/Lineup	X	
206	1	After Takeoff	X	
207	1	En Route	X	
208	1	Descent/Before Landing	X	
209	1	After Landing	X	
210	1	Engine Shutdown	X	

Area	Notes	Area Name	QUAL	MSN
211	1	Before Leaving Airplane	X	
212	1	Postflight	X	
213	2	Mission Procedures		X
214	2	NVG Usage/Limitations		X
215	2	Air-to-Air Refueling System/Procedures		X
216	1	Engine	X	
217	1	Propeller	X	
218	1	Fuel	X	
219	1	Electrical	X	
220	1	Hydraulic	X	
221	1	Flight Controls/Flaps	X	
222	1	Landing Gear/Brakes/Steering	X	
223	1	Fire Detection/Extinguishing	X	
224	1	Pneumatic/Bleed Air	X	
225	1	Environmental/Air-Conditioning	X	
226	1	Pressurization/Depressurization	X	
227	1	Anti-Icing/De-Icing	X	
228	1	Lighting	X	
229	1	Oxygen	X	
230	1	Auxiliary Power Unit (APU)	X	
231	1	Doors/Hatches/Ramps	X	
232	1	Windows/Windshields	X	
233	1	Radio/Radar Systems	X	
234	1	Inertial Navigation System (INS)/ Self-Contained Navigation System (SCNS)	X	
235	1	Voice Recorder/Digital Flight Data Recorder (DFDR)	X	
236	1	Weapons		X
237	1	Aircraft Defensive Systems/Equipment		X
238-249		Reserved for Future Use		

Area	Notes	Area Name	QUAL	MSN
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method.				

7.4.1. Areas 1 through 19: Use general evaluation grading criteria in [Chapter 2](#) of this volume.

7.4.2. Areas 20 through 29: Use instructor grading criteria in [Chapter 3](#) (if applicable).

7.4.3. Areas 200 through 249: The following subparagraphs contain the evaluation grading criteria for the grading areas listed in **Table 7.1**.

7.4.3.1. Area 200. Takeoff and Landing Data (TOLD).

7.4.3.1.1. Electronic Takeoff and Landing Data (E-TOLD). When the E-TOLD program is instituted, engineers receiving an evaluation will be required to compute TOLD using the -1-1 performance manual. This will apply to both initial and recurring evaluations. The E-TOLD program can be used for the rest of the evaluation only if the manual TOLD is completed to the satisfaction of the evaluator.

7.4.3.1.2. Q. Correctly computed the TOLD using applicable performance data and corrections for existing field conditions. Transcribed Mini TOLD correctly. Fully knowledgeable of takeoff and landing performance data.

7.4.3.1.2.1. TOLD criteria:

7.4.3.1.2.2. Required Airspeeds: ± 2 knots.

7.4.3.1.2.3. Required Distances: ± 200 feet.

7.4.3.1.2.4. Predicted Takeoff Torque: ± 200 in/lbs.

7.4.3.1.3. Q-. Minor errors in the use of applicable performance charts, computing the performance data, or correcting for existing field conditions resulting in data exceeding Q criteria. Incorrectly transcribed Mini TOLD. Had some knowledge of takeoff and landing performance data. Would not have compromised safety of flight.

7.4.3.1.3.1. TOLD criteria:

7.4.3.1.3.1.1. Required Airspeeds: ± 4 knots.

7.4.3.1.3.1.2. Required Distances: ± 400 feet.

7.4.3.1.3.1.3. Predicted Takeoff Torque: ± 400 in/lbs.

7.4.3.1.4. U. Failed to compute TOLD, omitted necessary corrections for existing field conditions, or errors in computing performance data resulted in airspeeds and/or distances exceeding Q- criteria. Limited knowledge of takeoff and landing performance data. Did or could have compromised safety of flight.

7.4.3.2. Area 201. Ground Support Equipment.

7.4.3.2.1. Q. Accomplished or demonstrated a satisfactory knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment with no errors, omissions, or deviations.

7.4.3.2.2. Q-. Accomplished or demonstrated a limited knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment with minor errors, omissions, or deviations that did not jeopardize safety.

7.4.3.2.3. U. Failed to accomplish or demonstrate adequate knowledge of positioning, normal operation, and emergency shutdown of required ground support equipment that did or could have jeopardized safety.

7.4.3.3. Area 202. Refuel/Defuel.

7.4.3.3.1. Q. Demonstrated a satisfactory knowledge of or accomplished refuel/defuel operations with no errors, omissions, or deviations from established procedures. Maintained fuel balance limits and adhered to existing published safety precautions. Demonstrated a working knowledge of the aircraft refueling/defueling system and a satisfactory knowledge of concurrent refueling procedures and appropriate safety precautions IAW TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*.

7.4.3.3.2. Q-. Demonstrated a limited knowledge of or accomplished refuel/defuel operations with minor errors, omissions, or deviations that did not jeopardize safety. Limited knowledge of the aircraft refueling/defueling system and components.

7.4.3.3.3. U. Demonstrated inadequate knowledge of or failed to accomplish refuel/defuel operations, made errors, omissions, or deviations that would have jeopardized safety. Inadequate knowledge of concurrent refueling operations and appropriate safety precautions.

7.4.3.4. Area 203. Before Starting Engines/Starting Engines.

7.4.3.5. Area 204. Before Taxi/Taxi.

7.4.3.6. Area 205. Before Takeoff/Lineup.

7.4.3.7. Area 206. After Takeoff.

7.4.3.8. Area 207. En Route.

7.4.3.9. Area 208. Descent/Before Landing.

7.4.3.10. Area 209. After Landing.

7.4.3.11. Area 210. Engine Shutdown.

7.4.3.12. Area 211. Before Leaving Airplane.

7.4.3.13. Areas 203 through 211: Use the grading criteria in the following subparagraphs:

7.4.3.13.1. Q. Accomplished required checklists without errors, omissions, or deviations. Backed up Ps on flight parameters (i.e., altitudes, airspeeds, and clearances). Satisfactorily monitored engine/system indicators. Fully knowledgeable of performance charts and procedures required to obtain and record in-flight

performance data. Fuel system usage and configuration IAW TO and applicable directives. Recognized and corrected minor omissions or deviations. Recognized, reported, and properly documented out of limit conditions or malfunctions.

7.4.3.13.2. Q-. Accomplished required checklists with minor errors, omissions, or deviations. Monitored flight parameters (i.e., altitudes, airspeeds, and clearances) with minor deviations. Monitored engine/system indicators with some deviations. Limited knowledge of performance charts and procedures required to obtain and/or record in-flight performance data. Limited knowledge of fuel system usage and configuration caused deviations from TO and applicable directives. Slow to recognize, report, and/or document out of limit conditions or malfunctions.

7.4.3.13.3. U. Failed to accomplish required checklists or made numerous errors, omissions, or deviations. Failed to back up Ps on flight parameters (i.e., altitudes, airspeeds, and clearances). Failed to monitor engine/system indicators. Inadequate knowledge of performance charts and/or procedures required to obtain data for two or three engines operating. Had inadequate knowledge of fuel system usage and configuration. Allowed limitations to be exceeded, which, without correction, would cause damage to equipment.

7.4.3.14. Area 212. Postflight.

7.4.3.14.1. Q. Accomplished required checklists without errors, omissions, or deviations. Insured aircraft properly configured for parking. [i.e., nose gear pin, ground wires (if applicable), intakes, door locks].

7.4.3.14.2. Q-. Accomplished required checklists with minor errors, omissions, or deviations. Minor errors insuring aircraft properly configured for parking.

7.4.3.14.3. U. Failed to accomplish required checklists. Did not insure aircraft was properly configured for parking.

7.4.3.15. Area 213. Mission Procedures. **Note:** FEs will be verbally evaluated on mission knowledge. Actual mission profiles will be flown to the maximum extent possible.

7.4.3.15.1. Q. Was fully knowledgeable of unit mission procedures. Was knowledgeable of mission events. Demonstrated adequate situational awareness.

7.4.3.15.2. Q-. Had limited knowledge of unit mission procedures. Demonstrated limited knowledge of mission events. Limited situational awareness.

7.4.3.15.3. U. Inadequate knowledge of unit mission procedures. Had inadequate knowledge of mission events. Had inadequate situational awareness.

7.4.3.16. Area 214. Night Vision Goggle (NVG) Usage/Limitations.

7.4.3.16.1. Q. Correctly described the use/limitations of NVGs. Properly preflighted and handled NVGs.

7.4.3.16.2. Q-. Minor omissions or deviations in describing the use/limitations of NVGs. Did not properly preflight, handle, or use NVGs, but caused no damage to equipment. Mission success was not negatively affected.

7.4.3.16.3. U. Procedures for using NVGs were incorrect. Caused damage to equipment. Mission unsuccessful as a result of improper NVG usage.

7.4.3.17. Area 215. Air-to-Air Refueling System/Procedures.

7.4.3.17.1. Q. Was fully knowledgeable of AAR operations and procedures. Performed all pre-refueling, refueling, and post-refueling checks in accordance with applicable checklist and directives. Satisfactorily managed/monitored fuel systems and onload/offload distribution in accordance with procedures and techniques outlined in TO, checklist and other directives. Correctly identified and located system components, explained and related their functions, and specified the limitations. Stated correct system status and its effect on related systems. Recognized malfunctions and applied proper corrective action(s).

7.4.3.17.2. Q-. Limited knowledge of AAR operations and procedures. Performed pre-refueling, refueling and post-refueling checks with some minor deviations/omissions that did not affect successful accomplishment of air refueling. Limited management/monitoring of fuel systems and onload distribution in accordance with procedures and techniques outlined in TO, checklist and other directives. Limited knowledge of identification, location, functions, and limitations of system components. Stated correct system status, but could not determine its effect on related systems. Delay in recognizing malfunctions and/or applying proper corrective action(s).

7.4.3.17.3. U. Inadequate knowledge of AAR operations and procedures. Deviations/omissions could have affected successful mission accomplishment. Inadequate knowledge of fuel system management or exceeded wing fuel balance limitations. Could not identify, locate, or relate systems functions and limitations. Could not determine status of system or its effect on related system. Failed to recognize malfunctions and/or apply corrective action(s).

7.4.3.18. Area 216. Engine.

7.4.3.19. Area 217. Propeller.

7.4.3.20. Area 218. Fuel.

7.4.3.21. Area 219. Electrical.

7.4.3.22. Area 220. Hydraulic.

7.4.3.23. Area 221. Flight Controls/Flaps.

7.4.3.24. Area 222. Landing Gear/Brakes/Steering.

7.4.3.25. Area 223. Fire Detection/Extinguishing.

7.4.3.26. Area 224. Pneumatic/Bleed Air.

7.4.3.27. Area 225. Environmental/Air-Conditioning.

7.4.3.28. Area 226. Pressurization/Depressurization.

7.4.3.29. Area 227. Anti-Icing/De-Icing.

7.4.3.30. Area 228. Lighting.

- 7.4.3.31. Area 229. Oxygen.
- 7.4.3.32. Area 230. Auxiliary Power Unit (APU).
- 7.4.3.33. Area 231. Doors/Hatches/Ramp.
- 7.4.3.34. Area 232. Windows/Windshields.
- 7.4.3.35. Area 233. Radio/Radar Systems.
- 7.4.3.36. Area 234. Inertial Navigation System (INS)/Self-Contained Navigation System (SCNS).
- 7.4.3.37. Area 235. Voice Recorder/Digital Flight Data Recorder (DFDR).
- 7.4.3.38. Area 236. Weapons.
- 7.4.3.39. Area 237. Aircraft Defensive Systems/Equipment.
- 7.4.3.40. Areas 216 through 237: Use the grading criteria in the following subparagraphs:
 - 7.4.3.40.1. Q. Demonstrated a complete knowledge of aircraft systems and operating limitations both with and without reference to TO and/or available aids.
 - 7.4.3.40.2. Q-. Limited knowledge of aircraft systems operations and limitations in some areas. Used individual technique instead of procedures and was unaware of differences.
 - 7.4.3.40.3. U. Unsatisfactory systems knowledge. Unable to demonstrate or explain the procedures for aircraft systems operations with or without reference to TO and/or available aids.
- 7.4.3.41. Area 238 – 249. Reserved for Future Use.

Chapter 8

AERIAL GUNNER EVALUATIONS

8.1. General. The AC-130W Aerial Gunner (AG) crew position is filled by Special Mission Aviators AFSC 1A9X1. AGs are a hybrid crew member performing both loadmaster and AG duties and will hold a crew qualification of AG. AGs require a combined qualification (QUAL) and mission (MSN) evaluation. **Exception:** After completion of the appropriate training, AG may receive a basic QUAL evaluation enabling them to fly on non-mission sorties performing loadmaster duties (i.e., no dry/live fire). (T-2)

8.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. AG specific areas are listed in this chapter. (T-2)

8.3. Qualification Evaluations: For qualification evaluations, Qualification Open and Closed Book examinations (or Formal School End of Course examinations), Boldface, and an EPE are prerequisites for initial evaluations and requisites for periodic evaluations. The EPE should cover the following areas during a qualification evaluation: Emergency signals, ground emergencies, in-flight emergencies (fuselage fire/smoke and fume elimination, in-flight door warning, rapid decompression, cargo door and ramp failure, cargo jettison, bailout procedures); landing emergencies (landing gear retracted, ditching). (T-2)

8.3.1. Initial/Requalification. In addition to areas listed in [Table 2.1](#) and [Table 3.1](#), qualification evaluations will include areas 250-262 in [Table 8.1](#). Required events include a minimum of complete aircraft preflight, completion of the applicable weight and balance forms, a sortie of any type, and a complete postflight. (T-2)

8.3.2. Periodic. In addition to areas listed in [Table 2.1](#) and [Table 3.1](#), qualification evaluations will include Note 1 areas in [Table 8.1](#). Required events include a minimum of complete aircraft preflight, a sortie of any type, and a complete postflight. (T-2)

8.4. Mission Qualification: Mission evaluations may be administered concurrently with qualification evaluations and will include areas 263-272 in [Table 8.1](#). Mission Open and Closed Book examinations (or Formal School End of Course examinations) and an EPE are requisites (prerequisites for initial). Mission open and closed book examinations may be combined with qualification examinations. The EPE should cover 30mm Gun, Common Launch Tube (CLT), and Small Diameter Bomb malfunction procedures. (T-2)

8.4.1. Initial/Requalification. The evaluation profile will include, at a minimum, 30mm gun pre-flight, CLT installation/removal procedures, 30mm live fire, and an aircraft postflight. Specify in the comments section of the AF Form 8 the mission events that were accomplished. Comply with the following requirements: (T-2)

8.4.1.1. 30mm live fire will include accomplishing the Prestrike, actual firing of the weapon, and Poststrike checklists.

8.4.1.2. CLT loading/unloading procedures will include accomplishing the CLT Installation/Removal checklist. Installation/removal of an actual/training CLT will be accomplished.

8.4.1.3. For a basic QUAL AG attaining MSN qualification, a QUAL evaluation will be conducted in conjunction with the INIT or RQ MSN evaluation if possible.

8.4.2. Periodic. If applicable conduct the QUAL/MSN evaluation in the eligibility period corresponding to the earliest expiration date. The evaluation profile will include 30mm Gun Pre-flight, 30mm live fire and CLT installation/removal procedures. Specify in the comments section of the AF Form 8 the mission events that were accomplished. Comply with the following requirements: (T-2)

8.4.2.1. 30mm live fire will include accomplishing the Prestrike, 30mm Strike, actual firing of the weapon, and Poststrike checklists.

8.4.2.2. CLT installation/removal procedures will include accomplishing the CLT Installation/Removal checklist.

Table 8.1. AG Grading Areas.

Area	Notes	Area Name	QUAL	MSN
250	2	Aircraft Limitations	X	
251	1	Interior Lighting	X	
252	1	Weight and Balance	X	
253	2	Border Clearance	X	
254	1	Aircraft Configuration	X	
255	2	Emergency Equipment	X	
256	2	Systems Knowledge	X	
257	1	Tie-Down/Restraint	X	
258	2	Cargo Loading Procedures/Limitations (TO 1C-130A-9 & AFJMAN 24-204)	X	
259	2	AAR System/Procedures	X	
260	2	Engine Running Onload /Offload (ERO)	X	
261	2	Passenger Handling	X	
262	1	Interphone Procedures	X	
263	2	Scanner Duties		X
264	2	Defensive Systems/Tactics & Threat Reactions		X
265	2	Munitions Handling/Up/Download Procedures		X
266	1	Prestrike		X

Area	Notes	Area Name	QUAL	MSN
267	1	Poststrike		X
268	2	NVG Usage/Limitations		X
269	2	Pyrotechnics		X
270	1	30mm Gun Operations		X
271	1	CLT Loading/Unloading Procedures		X
272	2	Weapons Malfunctions		X
273-299		Reserved for future use		
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method.				

8.5. Grading Criteria.

8.5.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

8.5.2. Areas 20 through 29: Use instructor evaluation grading criteria in [Chapter 3](#) of this volume (if applicable).

8.5.3. Areas 250 through 299: The following subparagraphs contain the evaluation grading criteria for the grading areas listed in **Table 8.1**.

8.5.3.1. Area 250. Aircraft Limitations.

8.5.3.1.1. Q. Correctly stated, understood, and could apply the correct limitations associated with the aircraft, and associated equipment.

8.5.3.1.2. Q-. Had difficulty stating correct limitations, or locating limitations in TO.

8.5.3.1.3. U. Failed to state various limitations, or could not locate correct limitations in TO.

8.5.3.2. Area 251. Interior Lighting.

8.5.3.2.1. Q. Demonstrated/Identified lighting equipment and proper use of interior lighting for appropriate missions.

8.5.3.2.2. Q-. Had difficulty demonstrating/identifying lighting equipment and proper use of interior lighting for appropriate missions.

8.5.3.2.3. U. Failed to demonstrate/identify lighting equipment and proper use of interior lighting for appropriate missions.

8.5.3.3. Area 252. Weight and Balance.

8.5.3.3.1. Q. Knowledge of aircraft limitations and weight and balance directives was satisfactory. Completed DD Form 365-4, *Weight and Balance Clearance Form Transport/Tactical*, legibly and accurately with only minor errors.

8.5.3.3.1.1. Takeoff or landing gross weights: ± 500 lbs.

8.5.3.3.1.2. Percent of Mean Aerodynamic Chord (MAC): ± 0.5 percent.

8.5.3.3.1.3. Aircraft gross takeoff limits: Not exceeded.

8.5.3.3.1.4. Center of gravity limitations: Not exceeded.

8.5.3.3.2. Q-. Limited knowledge of aircraft limitations, weight and balance directives. Had difficulty completing DD Form 365-4 legibly. Form 365-4 errors within criteria listed below.

8.5.3.3.2.1. Takeoff or landing gross weights: ± 501 to 1,000 lbs.

8.5.3.3.2.2. Percent of MAC: ± 0.6 to 1.0 percent.

8.5.3.3.2.3. Aircraft gross takeoff limits: Not exceeded.

8.5.3.3.2.4. Center of gravity limitations: Not exceeded.

8.5.3.3.3. U. Knowledge of aircraft limitations and weight and balance directives was inadequate. Failed to complete DD Form 365-4 accurately. Exceeded Q-criteria.

8.5.3.4. Area 253. Border Clearance.

8.5.3.4.1. Q. Correctly followed command guidelines. Completed/explained border clearance requirements IAW current directives.

8.5.3.4.2. Q-. Difficulty explaining border clearance requirements. Minor mistakes degraded effectiveness.

8.5.3.4.3. U. Could not accurately complete forms. Unaware of command guidance, or could not explain requirements.

8.5.3.5. Area 254. Aircraft Configuration.

8.5.3.5.1. Q. Ensured the aircraft was properly configured to accommodate mission requirements. Familiar with various configurations as outlined in applicable directives. Properly stowed configuration items that were not used.

8.5.3.5.2. Q-. Difficulty configuring the aircraft but did not impede mission. Limited knowledge of various configurations as outlined in applicable directives.

8.5.3.5.3. U. Failed to ensure proper aircraft configuration or caused mission delays. Had unsatisfactory knowledge of configurations. Failed to properly stow configuration items.

8.5.3.6. Area 255. Emergency Equipment.

8.5.3.6.1. Q. Located, inspected and/or demonstrated the proper use of aircraft emergency equipment. Satisfactory knowledge of equipment.

8.5.3.6.2. Q-. Difficulty locating, inspecting, and/or demonstrating the proper use of emergency equipment. Adequate knowledge of equipment, but needs improvement.

8.5.3.6.3. U. Failed to locate, inspect and/or demonstrate the proper use of aircraft emergency equipment and systems. Unsatisfactory knowledge of equipment.

8.5.3.7. Area 256. Systems Knowledge.

8.5.3.7.1. Q. Displayed satisfactory knowledge of systems, ensuring satisfactory operation was within prescribed limits. Explained proper corrective action for each type of malfunction.

8.5.3.7.2. Q-. Difficulty in displaying a satisfactory knowledge of systems. Slow to analyze problems or apply proper corrective actions.

8.5.3.7.3. U. Failed to display a satisfactory knowledge of systems. Unable to analyze problems or apply proper corrective actions.

8.5.3.8. Area 257. Tie-Down/Restraint.

8.5.3.8.1. Q. Correctly calculated and applied correct amount of restraint to a given item. Understood and could state the principals of restraint.

8.5.3.8.2. Q-. Difficulty calculating or applying the correct amount of restraint. Did not fully understand the principals of restraint.

8.5.3.8.3. U. Failed to correctly calculate or apply the correct amount of restraint. Did not understand and could not state the principals of restraint.

8.5.3.9. Area 258. Cargo Loading Procedures/Limitations (TO 1C-130A-9 and AFJMAN 24204).

8.5.3.9.1. Q. Satisfactorily performed/explained procedures related to aircraft loading procedures and limitations in accordance with TO 1C-130A-9 and AFJMAN 24-204.

8.5.3.9.2. Q-. Displayed some difficulty in performing/explaining procedures related to aircraft loading procedures and limitations in accordance with TO 1C-130A-9 and AFJMAN 24-204, but did not compromise safe execution.

8.5.3.9.3. U. Unable to perform/explain proper aircraft loading procedures/limitations and/or compromised safe execution.

8.5.3.10. Area 259. AAR System/Procedures

8.5.3.10.1. Q. Satisfactory knowledge of air-to-air refueling procedures. Adequate knowledge of air refueling system components and locations. Accomplished all air-to-air refueling procedures, including leak checks during contact, IAW with approved checklist and directives. Properly configured the aircraft prior to completion of the preparation for contact checklist.

8.5.3.10.2. Q-. Limited knowledge of air-to-air refueling procedures. Limited knowledge of air-to-air refueling system components and locations. Accomplished air-to-air refueling procedures with minor errors, omissions, or deviations. Performed limited checks during contact. Performed aircraft configuration with minor errors or omissions that did not affect successful mission accomplishment.

8.5.3.10.3. U. Had inadequate knowledge of air-to-air refueling procedures, system components and/or locations. Major errors, omissions, or deviations in procedures could have affected safety of flight. Failed to properly configure aircraft before

completion of preparation for contact checklist. Failed to perform required checks during contact.

8.5.3.11. Area 260. Engine Running Onload /Offload.

8.5.3.11.1. Q. Followed/expained proper procedures for engine running on/offloading operations.

8.5.3.11.2. Q-. Difficulty following/explaining proper procedures for engine running on/offloading operations.

8.5.3.11.3. U. Did not follow/explain proper procedures for engine running on/offloading operations.

8.5.3.12. Area 261. Passenger Handling.

8.5.3.12.1. Q. Correctly briefed and performed passenger handling procedures.

8.5.3.12.2. Q-. Had difficulty briefing and/or performing passenger handling procedures.

8.5.3.12.3. U. Failed to brief and/or did not perform proper passenger handling procedures.

8.5.3.13. Area 262. Interphone Procedures.

8.5.3.13.1. Q. Followed/expained proper interphone procedures.

8.5.3.13.2. Q-. Difficulty following/explaining proper interphone procedures.

8.5.3.13.3. U. Did not follow/explain proper interphone procedures.

8.5.3.14. Area 263. Scanner Duties.

8.5.3.14.1. Q. Demonstrated/expained proper procedures for conducting scanner duties.

8.5.3.14.2. Q-. Difficulty demonstrating/explaining proper procedures for conducting scanner duties.

8.5.3.14.3. U. Failed to demonstrate/explain proper procedures for conducting scanner duties.

8.5.3.15. Area 264. Defensive Systems/Tactics & Threat Reactions.

8.5.3.15.1. Q. Identified/expained aircraft defensive systems and tactics.

8.5.3.15.2. Q-. Difficulty identifying/explaining aircraft defensive systems and tactics.

8.5.3.15.3. U. Failed to identify/explain aircraft defensive systems and tactics.

8.5.3.16. Area 265. Munitions Handling/Up/Download Procedures.

8.5.3.16.1. Q. Followed/expained proper procedures for munitions handling/up/download operations.

8.5.3.16.2. Q-. Difficulty following/explaining proper procedures for munitions handling/up/download operations.

8.5.3.16.3. U. Did not follow/explain proper procedures for munitions handling/up/download operations.

8.5.3.17. Area 266. Pre-strike.

8.5.3.17.1. Q. Completed prestrike IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

8.5.3.17.2. Q-. Minor deviations from established prestrike procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

8.5.3.17.3. U. Failed prestrike critical component or could not conduct a satisfactory prestrike. Individual technique was unsafe and/or violated established procedures.

8.5.3.18. Area 267. Poststrike.

8.5.3.18.1. Q. Completed poststrike IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

8.5.3.18.2. Q-. Minor deviations from established poststrike procedures. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

8.5.3.18.3. U. Failed poststrike critical component or could not conduct a satisfactory poststrike. Individual technique was unsafe and/or violated established procedures.

8.5.3.19. Area 268. NVG Usage/Limitations

8.5.3.19.1. Q. Able to operate or explain the operation of NVG.

8.5.3.19.2. Q-. Had minor difficulties operating or explaining the operation of NVG.

8.5.3.19.3. U. Unable to operate or explain operation of NVGs in a safe manner.

8.5.3.20. Area 269. Pyrotechnics.

8.5.3.20.1. Q. Thorough knowledge of pyrotechnics. Could identify the appropriate pyrotechnics for the mission. Satisfactory knowledge of ground and in-flight emergency procedures.

8.5.3.20.2. Q-. Limited knowledge of pyrotechnics. Did not always correctly identify the most efficient pyrotechnics for the mission, but safety was not affected.

8.5.3.20.3. U. Lacked knowledge of pyrotechnics. Could not identify appropriate pyrotechnics for the mission. Inadequate knowledge of emergency procedures; compromised safety.

8.5.3.21. Area 270. 30mm Gun Operations

8.5.3.21.1. Q. Completed 30mm gun operations IAW tech orders, checklists, and instructions. Individual technique complied with established procedures.

8.5.3.21.2. Q-. Minor deviations from established 30mm gun operations. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

8.5.3.21.3. U. Failed 30mm gun operations critical component or could not satisfactorily conduct gun firing operations. Individual technique was unsafe and/or violated established procedures.

8.5.3.22. Area 271. CLT Loading/Unloading Procedures.

8.5.3.22.1. Properly performed CLT Loading/Unloading procedures in a safe and efficient manner IAW appropriate checklist procedures.

8.5.3.22.2. Displayed some difficulty performing or made minor deviations from CLT Loading/Unloading procedures, but still performed procedures in a safe manner.

8.5.3.22.3. Unable to perform CLT Loading/Unloading procedures in a safe manner.

8.5.3.23. Area 272. Weapons Malfunctions.

8.5.3.23.1. Q. Able to identify and can quickly and efficiently clear all weapons malfunctions IAW tech orders, checklist and instructions. Additionally, examinee demonstrates through knowledge on all possible causes for malfunctions. Individual technique complied with established procedures.

8.5.3.23.2. Q-. Misidentified malfunction(s), but used the correct procedure to clear weapon. Unsure of possible causes. Noncritical steps to clear malfunction performed out of sequence. Individual technique was safe, but detracted from established procedures. Used individual technique instead of established procedure and was unaware of differences.

8.5.3.23.3. U. Incorrect procedures used to clear malfunction. Does not know possible causes for malfunctions. Critical steps to clear malfunction performed out of sequence or could not clear malfunction in a satisfactory manner. Individual technique was unsafe and/or violated established procedures.

8.5.3.24. Areas 273-299. Reserved for Future Use.

Chapter 9

DIRECT SUPPORT OPERATORS

9.1. General. Direct Support Operators (DSO) require a combined qualification and mission evaluation. Instructors will demonstrate instructor duties on all periodic evaluations. (T-2)

9.2. Requirements. Refer to [Chapter 2](#) for all evaluations. Instructors will demonstrate instructor duties on all evaluations; refer to [Chapter 3](#) for instructor evaluation grading areas and criteria. DSO specific areas are listed in this chapter. (T-2)

9.3. Combined Qualification/Mission Evaluations. See [Table 9.1](#) for required evaluation areas.

9.3.1. Initial/Requalification. Required events include: a complete equipment preflight; a flight profile that includes a realistic threat scenario; at least one aircraft defensive maneuver during any portion of a tactical mission in which the DSO provides input; and postflight procedures. Any mission in an actual threat environment will satisfy same requirements. (T-2)

9.3.2. Periodic Qualification/Mission. Requirements for periodic evaluations are the same as initial/requalification evaluations. (T-2)

Table 9.1. Direct Support Operator Evaluation Criteria.

Area	Notes	Area Name
300	2	Control of Classified Material
301	2	Communications Surveillance Suite (CSS) Operation
302	2	Tactical Data Receiver (TDR) Operation
303	2	Global Positioning System (GPS) Operation
304	2	Threat Knowledge
305	1	Threat Analysis
306	1	Threat Reporting
307	2	Defensive Systems
308	1	Mission Operations
309-349		Reserved for future use
Notes: 1. Required in-flight or WST certified for this event. 2. Required in-flight, WST certified for this event, or alternate method.		

9.4. Grading Criteria.

9.4.1. Areas 1 through 19: Use general grading criteria in [Chapter 2](#) of this volume.

9.4.2. Areas 20 through 29: Use instructor grading criteria in [Chapter 3](#) (if applicable).

9.4.3. Areas 300 through 349: The following subparagraphs contain the evaluation grading criteria for the grading areas listed in **Table 9.1**.

9.4.3.1. Area 300. Control of Classified Material.

9.4.3.1.1. Q. Acquired, inventoried, maintained positive control, and/or demonstrated the proper use and storage of classified material, equipment, and information. Satisfactory knowledge of all procedures, including destruction.

9.4.3.1.2. Q-. Difficulty acquiring, inventorying, maintaining positive control and/or demonstrating the proper use of classified material, equipment, and information. Adequate knowledge of procedures but needs improvement.

9.4.3.1.3. U. Failed to acquire, inventory, maintain positive control and/or demonstrate proper use of classified material, equipment, and information. Inadequate knowledge of procedures.

9.4.3.2. Area 301. Communications Surveillance Suite (CSS) Operation.

9.4.3.2.1. Q. Demonstrated proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS applicable to operator's mission area. Demonstrated the ability to use different pieces of CSS equipment in tandem. Satisfactory knowledge of CSS hardware and software operations, installation, and troubleshooting.

9.4.3.2.2. Q-. Difficulty demonstrating proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS applicable to the operator's mission area. Difficulty using different pieces of CSS equipment simultaneously. Adequate knowledge of CSS equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

9.4.3.2.3. U. Failed to demonstrate proper execution of frequency spectrum scans, discrete frequency searches and manual operations employing all assets of the CSS as applicable to operator's mission area. Failed to use different pieces of CSS equipment in tandem. Inadequate knowledge of CSS hardware and software operations, installation, and troubleshooting.

9.4.3.3. Area 302. Tactical Data Receiver (TDR) Operation.

9.4.3.3.1. Q. Demonstrated proper set-up and use of the Tactical Data Receiver as applicable to the operator's mission area. Configured TDR and applicable software in satisfactory amount of time. Extracted TDR information pertinent to the mission. Satisfactory knowledge of TDR equipment hardware and software operations, installation, and troubleshooting.

9.4.3.3.2. Q-. Difficulty demonstrating proper set-up and use of the Tactical Data Receiver as applicable to the operator's mission area. Configured TDR and applicable software in a satisfactory amount of time, but needs improvement. Extracted TDR information pertinent to the mission but needs improvement. Adequate knowledge of TDR equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

9.4.3.3.3. U. Failed to set-up and use of the Tactical Data Receiver as applicable to the operator's mission area. Failed to configure TDR and/or applicable software within a satisfactory amount of time. Unable to extract TDR information pertinent to the mission. Unsatisfactory knowledge of TDR equipment hardware and software operations, installation, and troubleshooting.

9.4.3.4. Area 303. Global Positioning System (GPS) Operation.

9.4.3.4.1. Q. Demonstrated proper set-up and use of the GPS in conjunction with navigational software. Demonstrated use of the GPS as an aid to situational awareness. Integrated GPS information into CSS and TDR operations. Satisfactory knowledge of GPS equipment hardware and software operations, installation, and troubleshooting.

9.4.3.4.2. Q-. Difficulty demonstrating proper set-up and use of the GPS in conjunction with navigational software. Difficulty demonstrating use of the GPS as an aid to situational awareness. Difficulty integrating GPS information into CSS and TDR operations. Adequate knowledge of GPS equipment hardware and software operations, installation, and troubleshooting, but needs improvement.

9.4.3.4.3. U. Failed to set-up and use the GPS in conjunction with navigational software. Failed to use the GPS as an aid to situational awareness. Unable to integrate GPS information into CSS and TDR operations. Unsatisfactory knowledge of GPS equipment hardware and software operations, installation, and troubleshooting.

9.4.3.5. Area 304. Threat Knowledge.

9.4.3.5.1. Q. Demonstrated knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area. Demonstrated knowledge of Joint Threat Warning System capabilities/limitations to threats. Satisfactory overall threat knowledge.

9.4.3.5.2. Q-. Demonstrated adequate knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area, but needs improvement. Demonstrated only basic knowledge of Joint Threat Warning System capabilities/limitations to threats. Adequate overall threat knowledge but needs improvement.

9.4.3.5.3. U. Demonstrated insufficient knowledge of characteristics, procedures, and capabilities associated with threats to the aircraft as applicable to the operator's mission area. Demonstrated a lack of knowledge of Joint Threat Warning System capabilities/limitations to threats. Unsatisfactory overall threat knowledge.

9.4.3.6. Area 305. Threat Analysis.

9.4.3.6.1. Q. Demonstrated the ability to prioritize equipment resources against threats, based on location and level of threat to the aircraft.

9.4.3.6.2. Q-. Difficulty prioritizing equipment resources against threats based on location and level of threat to the aircraft.

9.4.3.6.3. U. Failed to prioritize equipment resources against threats based on location and level of threat to the aircraft.

9.4.3.7. Area 306. Threat Reporting.

9.4.3.7.1. Q. Demonstrated ability to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member in a timely manner. Threat calls excluded extraneous information and met acceptable standards for clarity and brevity. Demonstrated ability to extract essential elements of information (EEIs) and intelligence pertinent to technical reporting.

9.4.3.7.2. Q-. Demonstrated ability to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member, but needs improvement in timeliness, clarity, and/or brevity. Threat calls included some extraneous information not pertinent to the aircraft and/or mission, but the overall mission was not impacted. Difficulty extracting EEIs and intelligence pertinent to technical reporting.

9.4.3.7.3. U. Failed to relay appropriate situational awareness or threat-related information affecting the safety of the aircraft or its mission to the appropriate crew member in a timely manner. Threat calls included extraneous information and fell below acceptable standards for clarity and brevity. Inadequate threat reporting negatively impacted the mission. Failed to extract EEIs and intelligence pertinent to technical reporting.

9.4.3.8. Area 307. Defensive Systems.

9.4.3.8.1. Q. Demonstrated satisfactory knowledge of aircraft defensive systems. Familiar with nomenclature, operation, capabilities/limitations of aircraft defensive system components against specific threats. Able to describe impact of equipment outages on mission objectives.

9.4.3.8.2. Q-. Adequate knowledge of defensive systems but needs improvement. Difficulty with nomenclature, operation, capabilities/limitations of defensive system components against specific threats. Difficulty describing impact of equipment outages on mission objectives.

9.4.3.8.3. U. Inadequate knowledge of aircraft defensive systems. Unfamiliar with nomenclature, basic operation, capabilities/limitations of aircraft defensive system components against specific threats. Unable to describe impact of equipment outages on mission objectives.

9.4.3.9. Area 308. Mission Operations.

9.4.3.9.1. Q. Able to explain support provided to AC-130W tactical operations by support aircraft (e.g., electronic warfare aircraft, command and control aircraft, etc.). Able to explain basic mission employment doctrine of the AC-130W and impact of Direct Support Operators supporting AC-130W operations.

9.4.3.9.2. Q-. Difficulty explaining support provided to AC-130W tactical operations by support aircraft (e.g., electronic warfare aircraft, command and control aircraft, etc.). Able to explain basic mission employment doctrine of the AC-130W

and impact of Direct Support Operators supporting AC-130W operations, but needed improvement.

9.4.3.9.3. U. Unable to explain support provided to AC-130W tactical operations by support aircraft (e.g., electronic warfare aircraft, command and control aircraft, etc.). Unable to explain basic mission employment doctrine of the AC-130W and impact of Direct Support Operators supporting AC-130W operations.

9.4.3.10. Areas 309 – 349: Reserved for Future Use.

TOD D. WOLTERS, Lt Gen, USAF
Deputy Chief of Staff for Operations

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

Air Force Instruction (AFI) 11-200 *Aircrew Training, Standardization /Evaluation, and General Operations Structure*, 19 January 2012

AFI 11-202, Vol 2, *Aircrew Standardization/Evaluation Program*, 13 September 2010

AFI 11-202, Vol 3, *General Flight Rules*, 22 October 2010

AFI 11-290, *Cockpit/Crew Resource Management Training Program*, 15 October 2012

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment*, 3 December 2012

AFMAN 33-363, *Management of Records*, 1 March 2008

TO 1C-130A-9, *Cargo Loading Manual*, 7 December 2009

TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 10 February 2010

Adopted Forms

AF Form 8, *Certificate of Aircrew Qualification*

AF Form 8A, *Certificate of Aircrew Qualification (Multiple Aircraft)*

AF Form 847, *Recommendation for Change of Publication*

AF IMT Form 4031, *CRM Skills Criteria Training/ Evaluation*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Recorder*

DD Form 365-4, *Weight and Balance Clearance Form Transport/Tactical*

Abbreviations and Acronyms

A3V—MAJCOM Standardization/Evaluation

AF—Air Force

AFE—Aircrew Flight Equipment

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFRC—Air Force Reserve Command

AFSOC—Air Force Special Operations Command

AI—Air Interdiction

AG—Aerial Gunner

ANG—Air National Guard

APU—Auxiliary Power Unit

ARMS—Aviation Resource Management System

AAR—Air-to-Air Refueling
ASR—Airport Surveillance Radar
ATA—Actual Time of Arrival
ATC—Air Traffic Control
ATO—Air Tasking Order
BAQ—Basic Aircraft Qualified
BDA—Battle Damage Assessment
CAS—Close Air Support
CLT—Common Launch Tube
COMSEC—Communications Security
CP—Copilot
CRM—Crew Resource Management
CSO—Combat Systems Operator
CSS—Communications Surveillance Suite
DD—Department of Defense, usually associated with DoD forms
DFDR—Digital Flight Data Recorder
DoD—Department of Defense
DR—Dead Reckoning
DSO—Direct Support Operator
DVR—Digital Video Recorder
EI—Essential Elements of Information
EPE—Emergency Procedure Evaluation
ERO—Engines Running Onload/Offload
ETA—Estimated Time of Arrival
E-TOLD—Electronic Takeoff and Landing Data
ETP—Equal Time Point
FCIF—Flight Crew Information File
FE—Flight Engineer
FLIP—Flight Information Publications
GPS—Global Positioning System
GW—Gross Weight
HQ—Headquarters

IAW—In Accordance With

ILS—Instrument Landing System

IMT—Information Management Tool

INIT—Initial

INS—Inertial Navigation System

INSTM—Instrument

JTCG/ME—Joint Technical Coordinating Group for Munitions Effectiveness

KIAS—Knots Indicated Airspeed

LNO—Liaison Officer

LOC—Localizer

MAC—Mean Aerodynamic Chord

MAJCOM—Major Command

MAP—Missed Approach Point

MDA—Minimum Descent Altitude

MDS—Mission Design Series

mm—Millimeter

MSN—Mission

NAV—Navigator

NAVAIDS—Navigational Aids

NDB—Non-Directional Beacon

nm—Nautical Mile

NOTAMS—Notice to Airmen System

NVG—Night Vision Goggle

OGV—Operations Group Standardization/Evaluation

OPR—Office of Primary Responsibility

OPSEC—Operations Security

P—Pilot

PAR—Precision Approach Radar

PGM—Precision Guided Munitions

QUAL—Qualification

RDS—Records Disposition Schedule

RETA—Revised Estimated Time of Arrival

RNP—Required Navigation Performance
ROE—Rules of Engagement
RQ—Requalification
SCA—Self-Contained Approach
SCNS—Self-Contained Navigation System
SIMCERT—Simulator Certification
SOF—Special Operations Forces
TACAN—Tactical Air Navigation
TAS—True Airspeed
TDR—Tactical Data Receiver
TIC—Troops in Contact
TO—Technical Order
TOLD—Takeoff and Landing Data
TVC—Training Value Code
U—Unqualified or Unsatisfactory
USAF—United States Air Force
VDP—Visual Descent Point
VFR—Visual Flight Rules
VHF—Very High Frequency
VOR—Omnidirectional Range
WST—Weapon System Trainer